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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

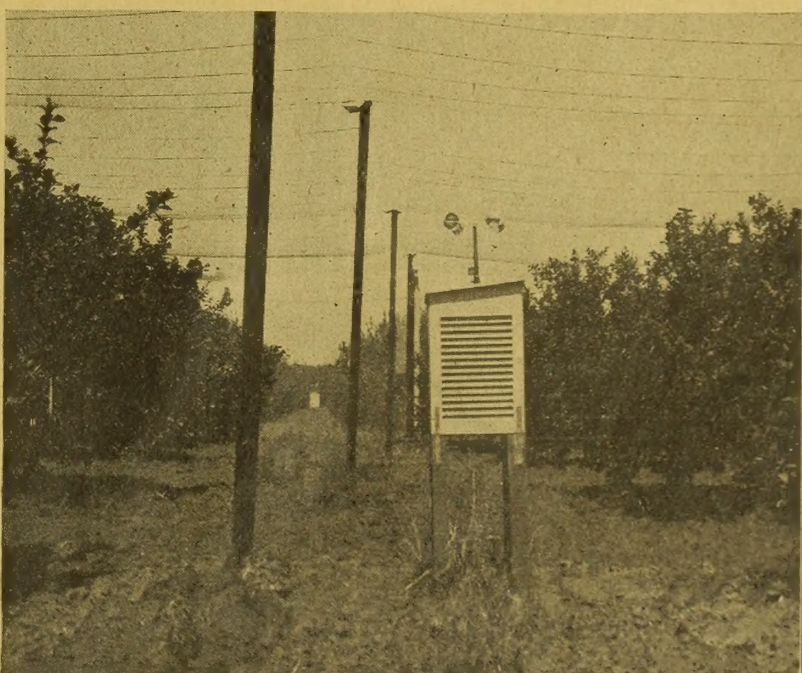
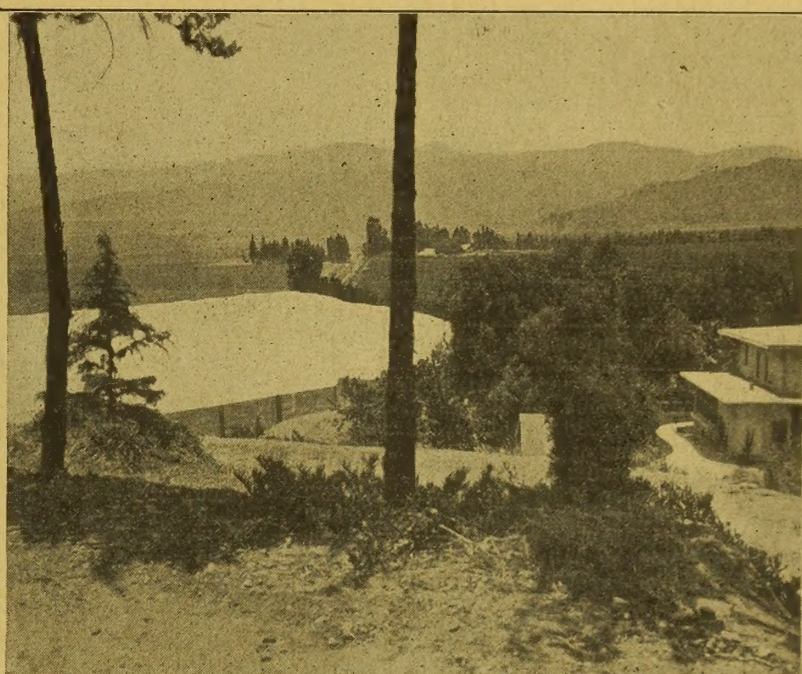
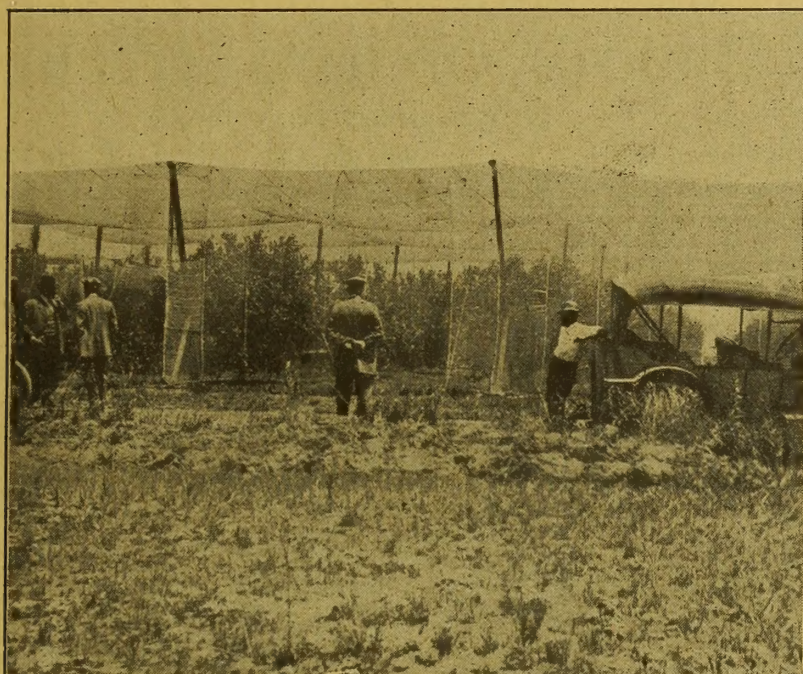
July 1, 1915

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SAN FRANCISCO

JUL 6 - 1915

Covering Lemon Orchards With Cloth



A Section of the Chase Orchards at Corona
Covered with Tobacco Cloth

The Flagler Orchard, of Which Some Seven
Acres is Covered

The Winds Will Break Down the Cloth
Occasionally

Wind and Temperature Station Inside, and
Similar Station in the Distance Outside

Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Cyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Cyclopedia. Write us about it.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman.....	\$ 1.50	\$ 2.25	3
American Peach Orchard, by Waugh.....	1.00	1.85	2
Arid Agriculture, by Buffum.....	1.50	2.35	3
Book of Alfalfa, by Coburn.....	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey.....	1.50	2.20	3
Cement Worker's Handbook.....	.50	1.30	1
Citrus Fruits, by Coit (new).....	2.00	2.75	4
Cooperation in Agriculture, by Powell.....	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller.....	1.50	2.30	3
Date Growing, by Popenoe.....	2.16	2.85	4
Feeds and Feeding, by Henry.....	2.25	3.00	5
Farm and Garden Rule Book, by Bailey.....	2.17	2.90	4
Farm Animals, Hunt and Burkett.....	1.50	2.35	3
Farm Sewage, by Santee.....	.50	1.40	1
Field Manual for Sugar Beet Growers, Adams.....	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock.....	1.50	2.40	3
Farm Manures, by Thorne.....	1.50	2.25	3
Farm Friends and Farm Foes.....	.90	1.85	2
Farmers of Forty Centuries, by King.....	2.15	2.95	4
Fertilizers, by Vorhees.....	1.25	2.15	3
Fertilizers and Crops, by Van Slyke.....	2.50	3.35	5
Fertilizers, Source, Purchase and Use, by Smith.....	1.00	1.90	2
Fungous Diseases of Plants, by Duggar.....	2.40	3.25	5
Garden Helps, by Hall.....	.75	1.65	2
Gasoline Engine on the Farm, by Putnam.....	2.00	2.60	4
Gardening in California, Landscape and Flower by McLaren.....	3.75	4.50	7
Garden Book of California (Ornamental), by Angier.....	2.00	2.85	4
How to Keep Farm Accounts.....	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll.....	1.50	2.30	3
Harpers Gasoline Engine Book.....	1.00	1.80	2
Irrigation and Drainage, by King.....	1.50	2.40	3
Intensive Farming.....	.75	1.60	2
Insecticides, Fungicides and Weed-killers by Bourcart.....	4.50	5.00	9
Insect Pests of Farm, Garden and Orchard, by Sanderson.....	3.00	3.85	6
Lessons in Cooking Thro Preparation of Meals.....	2.00	2.85	4
Modern Gasoline Automobile, by Page.....	2.50	3.10	5
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Practical Garden Book, by Bailey and Hunn.....	1.00	1.90	2
Productive Feeding of Farm Animals, by Woll (new).....	1.50	2.35	3
Primer of Irrigation, Anderson (paper cover).....	1.00	1.85	2
Potato Book, by Grubb.....	2.20	2.70	4
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Play and Recreation, by Curtis.....	1.25	2.05	3
Rural Improvement, by Waugh.....	1.25	2.05	3
Standard Cyclopedia of Horticulture, by Bailey (new) 6 volumes.....	36.00	36.50	72
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Swine in America, by Coburn.....	2.50	3.25	5
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Perfect Poultry of America.....	2.50	3.00	5
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Rhode Island Reds.....	.75	1.65	2
Turkeys.....	.75	1.65	2
Western Poultry Book, by Mrs. Basley.....	1.00	1.75	2

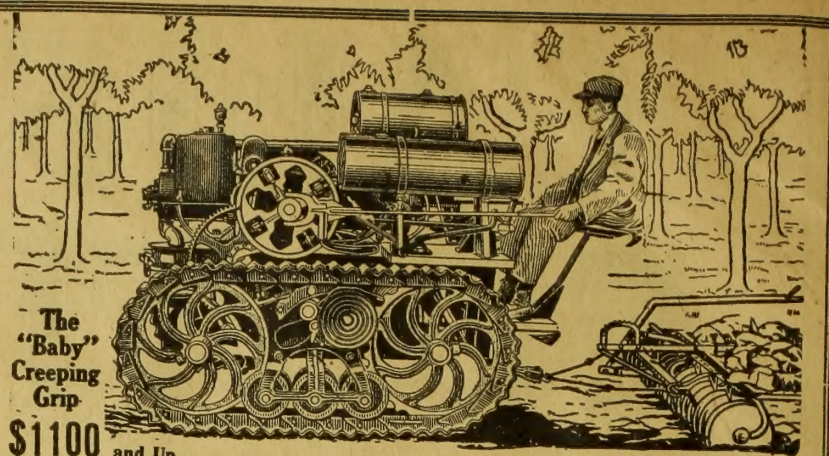
BEEES

A B C and X Y Z of Bee Culture.....	2.00	2.85	4
Beekeeper's Guide, by Dr. Cook.....	1.20	2.00	3

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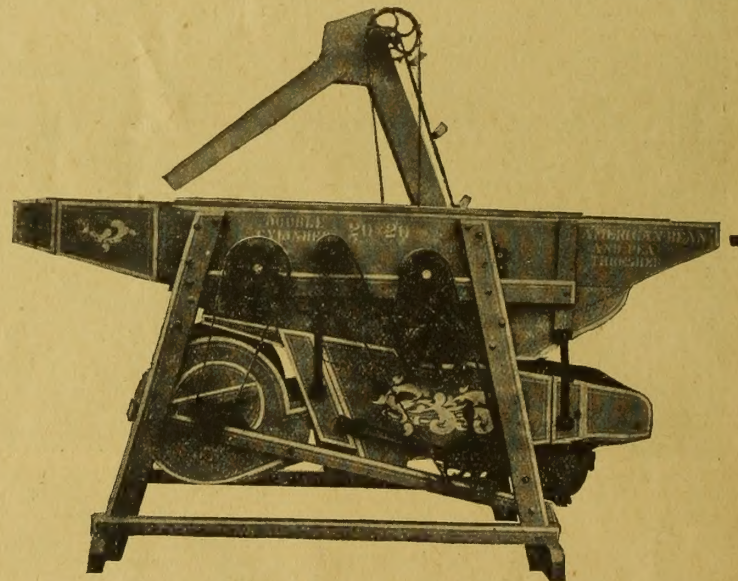
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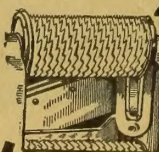
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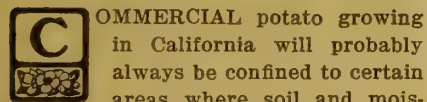
Vol. XLV No. 1

LOS ANGELES: THURSDAY, JULY 1, 1915

One Dollar Yearly

Fall Potatoes for the Sacramento Valley

Written for California Cultivator
By W. S. Guilford



COMMERCIAL potato growing in California will probably always be confined to certain areas where soil and moisture conditions are particularly favorable. The delta region below Stockton should continue to hold first place in tonnage produced, and there in the moist peat and silt soil with moisture under control, potatoes are planted and dug almost any day in the year. Then the Salinas and Lompoc districts are peculiarly adapted to the growing of high class potatoes, and the methods of growing have been worked out with reference to their one crop season and the climatic conditions. But there are places in the great interior valley of California where there is an open, mellow, easily worked soil, where ample irrigation water is available, and where drainage is good, that two crops of potatoes can be raised to advantage—in some instances as a commercial proposition and in many others for the home supply. In fact this home supply can be produced on lands not so light and mellow if the proper preparation is given and they are handled right. By this is meant that a heavy soil may be "lightened" by growing alfalfa on it and by manuring, and gradually worked into the tilth and condition that is necessary for easy working and the application of irrigation water without the baking and cracking that sometimes follows on heavy land and literally chokes the stems and tubers of the potato plant. When this heavy land has been made mellow it should be handled in the same way as will be suggested for the mellow lands mentioned.

In growing potatoes the first thing to be considered is that the crop is in the cool weather class with radishes, lettuce and such crops as distinguished from hot weather crops like melons, corn, etc. The native home of the plant is in the cool valleys in the Rocky and Andes Mountains at an elevation of a mile or higher. There the days are hot and the nights comparatively cool, and there is a rather short period of intense growing weather. The long, intense heat and drouth of the summer period in the Sacramento Valley is not known.

In order to provide conditions as nearly as possible like those in the native home of the potato it is necessary to plant either very early in the season or late so that the intense summer heat is avoided. For instance, potatoes planted in February are well out of the way by May, or before the hottest weather begins. Then the later crop should be planted in August so that it may get started while the maximum growing season

continues, but the tubers may complete their development and mature during the cooler weather in October.

With these climatic requirements of the crop in mind there are certain cultural essentials that must be considered.

First, it is necessary that a good seed bed be prepared. The soil must be plowed deep and disked and harrowed and worked until it is fine and the weeds are well killed out. The moisture content must be such that the potato plant can get a good start before it will be necessary to irrigate. If the rains in the spring have not filled the soil and the subsoil sufficiently with moisture there must be a good irrigation that will send the moisture deep, at least three feet, into the soil, either before the preparation of the seed bed begins or while the work is in progress. This irrigation in August before the fall crop is planted is absolutely necessary.

With a seed bed well prepared the next thing is to do the best possible in the way of securing seed. The most satisfactory seed for planting in warm weather districts and in the Southern states comes from short season Northern places. For instance Maine growers furnish seed for the potato growing sections of the states along the Gulf coast. Seed that is free from disease and grown in Oregon or the higher mountain valleys in California gives good results in the Sacramento Valley. Seed is not imported for every crop, but ordinarily every second year. It is important that the seed be free from rhizoctonia and fusarium, but it has been very difficult to find such during the past year or two. The former is present on the seed potato in the form of little black specks that resemble lumps of dirt, while the latter is indicated by a discoloration that appears when the end of the potato is cut. The remedies for these diseases now recommended are the planting of clean seed on land that has not been infected. When seed potatoes are affected with scab—a roughening of the surface that is quite common—they should be soaked for two hours in a solution made by adding formaldehyde to water at the rate of one pint to 30 gallons.

The seed for the second crop of potatoes for the small planter in the Sacramento Valley will probably be taken from the earlier crop in most cases because this will be the easiest to secure. When this seed is used it should be taken as soon as dug and stored in a cool place as is available, an old cellar for instance, where the tubers will not be affected by the intense summer heat. They should not be piled up, but spread out in thin layers on the floor or on shelves. They should be thoroughly dry when

put in storage and kept dry. Conditions should be such as to prevent sprouting during this storage period if possible because this weakens the vitality of the seed. If, however, sprouts do start they should be rubbed off when they are just starting. If the potatoes are allowed to remain in the sun until they have turned somewhat green before they are placed in storage they may keep better because of the thorough drying and ripening. Potatoes that have been greened should not be eaten; they are bitter and may contain injurious material.

For the early crop, that planted in February, it is an advantage to plant whole seed potatoes that have been allowed to start short, stocky sprouts. By carefully planting these with the sprouts up in a furrow that has been opened up and warmed by the sun for a day or two before planting, the crop will be hastened toward maturity a week or more over a crop grown from seed planted in the cold soil without this previous preparation of seed and soil. But with the late crop there would not be the same advantage because the soil is very warm, and with proper moisture there will be no difficulty in the seed sprouting and coming on fast enough.

To ridge the land where the rows are to be, then split the ridges with a plow, if the potatoes are to be planted by hand in this furrow, or plant with a planter on these ridges, is an advantage with either crop. Planted in this way the crop may be irrigated by running the water in the furrows at the sides of the ridges and an abundance of moisture is provided for the plant through its deep feeding roots without banking and solidifying the soil around the stems on which the tubers form. This can be kept mellow and open and well aired. Many failures in potato growing in the Sacramento Valley have been made because the soil around the potatoes became so hard that it would not permit the tubers to develop properly, and they have been found at digging time to be distorted in shape, of small size and very few in the hill. If this same soil had been formed into good high ridges, a foot high or more and 18 inches wide at the base, and so irrigated that the water did not cover the soil along the sides of the ridge or on the top of it, but simply ran in the furrow between the ridges slowly so that sufficient moisture "subbed" up into this ridge from below, good crops would have resulted.

The best potato growers in Europe use whole seed, and the number of planters in this country who follow this practice is increasing. The advantage in this is that a large amount of nourishment is available for giving the young plant a vigorous start, and

when the tubers are cut for seed it is of advantage to cut the seed pieces large for the same reason.

The second crop of potatoes in the Sacramento Valley is planted in August, and the amount of irrigating required will depend entirely on conditions. If the soil is thoroughly wet well down into the subsoil before the crop is planted no further irrigation may be necessary, but it would not be safe to figure on this. As soon as the soil about the roots begins to get dry water should be applied. No general rule can be given for irrigating, but the best results are most often secured by running a comparatively small stream for a good while, long enough to "sub" the water well into the subsoil. The depth to which the moisture has penetrated can be determined by running a sharp steel rod into the soil. It will go down easily as far as the moisture has, but it is difficult to run it into the dry dirt. The moisture should penetrate to a depth of at least three feet. Cultivation to keep the soil mellow and kill weeds should follow every irrigation.

The supply of moisture to the plant must be uniform; drouth followed by a liberal supply of moisture makes knobby potatoes. This is caused by the growth being stopped or arrested during the dry time and started again by the moisture.

Potatoes may be raised for home consumption almost anywhere and on almost any soil if properly handled, but the larger plantings in the Sacramento Valley should be confined to the lighter soils where irrigation is easy and where other crops can be rotated with potatoes. Then a certain acreage should be grown every year, regardless of the market properties, and the business should be laid out on at least a ten-year basis. Then the average price per year will be satisfactory; there will be some very high and some very low prices, but they will even up. One of the biggest gambles in the farming business is to take a flyer at a crop of potatoes when it looks as though the price for the crop at harvest time may be big. There is a possibility that thousands of others may think the same way about it—and a glutted market result.

But for the grower who has a suitable piece of land and other conditions favorable and who will get the proper equipment and will grow potatoes every year in a district where the bulk of the potatoes used for home consumption are shipped in, there should be a good future for the business. And there is no question about the advisability of a small patch for the farmer who has to buy his supply at the high price that results after the profits of several middlemen are added to the price secured by the original grower.

Relation of a Permanent Agriculture to Social Welfare

By Thomas Forsyth Hunt Before the Annual Convention
of National Real Estate Exchanges at Los Angeles

(Continued from Last Week)

A not unimportant part then of the general problem we are discussing is the fact that the open country cannot afford to support numerous social, religious and racial divisions.

One hot evening last summer I lay on the campus of the University of Missouri, listening to a sociologist while he discussed the rural social conditions in the Southeastern part of the United States. He said that manufacturing industries were being introduced into the cities of the South. The white people were moving into the cities and colored folk acquiring the lands. I know nothing concerning

the facts, but if conditions are as he states, then God pity the Southeastern part of the United States. For it is only a question of time until the cities also will be inhabited by colored people. If families in the cities raise less than two children and families in the country raise three or more it does not require a profound mathematician to show what will happen.

The census bureau of the United States divides population into urban and rural. The urban population is composed of all persons living in towns of more than 2500 inhabitants; the remainder comprises the rural population. On this basis there are 1,500,000 more persons in the urban popula-

tion between the ages of 25 and 44 years, that is of breeding age, than there are in the rural communities. On the other hand there are 6,000,000 more children under 14 years of age in the country than there are in the cities. If we assume that all persons between the ages of 25 and 64 may be considered parents and all persons under 25 may be considered children, then we will see that every couple in the city raises a little less than two, while every couple in the country raises a little less than three children. This is of course quite inaccurate from a statistical point of view, but it answers for the purposes of comparison. In making this comparison, it

must be remembered that a considerable body of young people between the ages of 15 and 24 have moved from the country to the city, while but few have moved from the city to the country.

As long as the people in the country raise larger families than those in the cities and the cities continue to grow faster than the country, it follows that in the cities every generation must be affected by the character of the previous generation in the country.

New York and Boston are rapidly becoming un-American cities for the simple reason that they do not raise enough children to maintain, let alone

(Continued on Page 5)

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Particulars regarding parcels, contents of each parcel and any other information regarding the sale will be furnished upon application to the Receiver.

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TOBACCO CLOTH OVER ORCHARDS

SOME 15 years ago the Cultivator gave illustration and description of a lath house built over an orchard at Riverside. We believe this orchard was entirely of oranges. The idea was two-fold, primarily to protect the fruit and trees from frost; also to learn regarding the effect of tempering the sun's rays by this structure. In fact, in the Cultivator of October 24, 1902, Mr. Everest, manager of the orchard which was covered, writes:

"Fruit does not seem to be affected unfavorably by leaving a cover over the orchard during the summer, unless shortage in crop can be laid to shading of trees. There is little loss of moisture by evaporation where ground is protected by this shade, and trees contain practically no split oranges or sun-burned fruit. Ripening is delayed about two weeks, but quality is not affected unfavorably."

So apparently there was fear that even an unfavorable result might be secured. The structure consisted of redwood posts, 18 feet long, connected by pine one-by-fours braced, and all stayed with diagonal wires. The covering was of lath placed the same distance apart as their own width (requiring 50,000 lath per acre), thus shutting off one-half of the sunlight and aiding in retaining the heat to a degree during frosty nights. Mr. Everest writes in 1902:

"We have found the covering a sufficient protection against such frosts as have visited us since its erection about four years ago, though some tender growth was nipped this winter where lath sagged and sun entered freely."

The cost of the structure was about \$450 per acre. Its frail nature, coupled with the fact that the results were not all that could be desired, led to its removal, and we believe the experiment was not duplicated in any other orchard. One objection to the lath house construction was the fact that it furnished a "cold" shade.

Since attention has been called to results secured in tobacco fields of the South by the use of so-called tobacco cloth (a very light fabric of which over 40,000,000 yards are used annually in the South) the National Orange Company proceeded to cover with it a small tract of less than two acres of its lemon orchard in Corona. The tobacco cloth gives a much more effective "shade," or condition within the tent, the air is usually warmer, and as light as the fabric is the tem-

perature during the cooler nights will run about four degrees higher than outside. The great objection, and the one which makes tobacco cloth structures impracticable, is the cost. It is, however, cheaper than lath house structure, though instead of \$450, which is reported as the cost of the lath house, the tobacco cloth structure costs about \$400 per acre. With lemons selling as they are this year such cost means loss, for no matter what the quality of the fruit it is not selling this year at profitable figures.

Through the courtesy of Messrs. Waterbury, Garthwaite and Custer the editor of the Cultivator recently made a trip to two orchards at Corona in which plots have been covered with tobacco cloth. The first of these orchards visited was that of the National Orange Company owned by the Chases of Riverside. Mr. Frank Chase was at the orchard at the time of the visit and referred to the fact that it was a most interesting experiment, but from a practical standpoint with the average price of lemons he did not think it would ever be generally used in our orchards. The life of the cloth is about two years, though in that time it requires much repairing. The repairing is done by using a portable platform which is moved from place to place as needed. The first photograph on cover page gives the outside appearance of the covering. The gentlemen in the picture are Mr. Chase, whose face is almost lost out at the extreme left; by him is Prof. Lipman speaking to Mr. G. W. Waterbury. Mr. J. W. Garthwaite occupies the center of the picture, and the gentleman by the machine is Mr. Custer. The upper view to the right is on the larger tract in the Flagler Orchard of which Mr. W. C. McCully is manager. This shows only a portion of the Flagler covering. At the extreme right of the picture is the ranch house. The lower picture at the left, in which Messrs. Waterbury and Custer are standing near the center and Mr. Garthwaite is holding some of the fallen cloth, shows how the wind and the weakening cloth get the best of the structure where it is not given prompt and regular attention.

We did not see the readings of the instruments, one of which is maintained within and the other without the covering, but in general may say there is slightly greater humidity of the air within the tent, slightly higher temperature, and that the wind velocity is slightly lower.

Must Eat More

THE production of oranges is increasing twice as rapidly as is our population. As to markets now reached, they are handling nearly the capacity of the orange groves of the country. If the increase of output continues and there is no material increase of population, nor of consumption, the orange grower must be content with lower prices. How to increase the consumption of oranges has been the subject of serious discussion on the part of the management of the California Fruit Growers' Exchange. To the end that the most intelligent consideration might be given to the matter, eastern representatives of the exchange who have had to do with advertising were requested to come to California to learn more of our orange and the situation it has created and give to the management their best thought regarding these problems. Messrs. R. J. Grassley, advertising manager for the exchange, and W. T. Kestner, vice-president and general manager of the Lord & Thomas Advertising Agency of Chicago, which concern has handled the advertising of the exchange

for the past six years, together with several other of the eastern representatives of the exchange, have been attending the conference during the past two weeks.

In order to get in touch with the situation these representatives have visited the orange groves and packing houses and received information from those who are directly managing the campaign for greater consumption of California oranges. On last Wednesday several hundred growers gathered in Los Angeles and listened to addresses by Manager Powell and these gentlemen.

Mr. Powell stated the case squarely, in effect that Americans must eat at least twice as many oranges as they are eating today. They must look at oranges more as the Italians look at olives, as a regular feature of their diet. The Italians must have spaghetti, olives and olive oil and lemons; these are their staples. The Americans depend more largely upon meat. The healthfulness of a more extended fruit diet must be told to the people. Americans must drink more orange and lemon juice in the morning before breakfast and in the

evening after dinner. Instead of shipping 10,000 carloads of Valencias as we are doing now, we will soon be shipping 20,000. These will all come in competition with the peaches and apples and small fruits grown all over the country. The healthfulness of the orange must be emphasized. No other fruit is given to the public as is the orange, hermetically sealed; no matter how it is used it must be peeled before eating.

In Mr. Grassley's address he enlarged upon one feature of the advertising of California citrus fruits; the campaign had been absolutely honest. No inflated statements have been made as to its food value, but its general healthfulness and its attractiveness have been brought out in a way to appeal to every consumer. He urged upon the growers more than any other one thing the necessity of uniformity of output. If "Sunkist" brand is to be made a greater asset of the exchange it must be known only to appear on boxes of fruit which are of uniform quality. He even referred to the fact that a high-grade orange put under a medium grade label is objectionable. The few higher grade fruits mixed in would surely make the consumer dissatisfied and give him the feeling that the lower grade fruit was an inferior article which had been foisted upon him.

Mr. Kestner's address had to do with the professional or service end of advertising. He referred to several campaigns in addition to the campaign of making known the word "Sunkist." He spoke of the fact that some of the important advertisers of the country had built up such a business under their trademarks that now the trademark was considered worth millions of dollars. This is exactly the kind of campaign into which growers of California are entering with "Sunkist." This ultimately should be an asset equivalent to the orange groves of California.

The advertising of the exchange has been placed more largely in women's journals or those in which women have most general interest, for the reason that 59 per cent of the family income is spent by the women.

D. W. Francisco, assistant to the general manager of the Chicago office, gave a most interesting address touching upon the work of encouraging retailers to make display of oranges. He has found that one representative concern in a large town making a large window display with a low rate per dozen is more apt to secure a fair price to the consumer than is a definite effort toward lower prices. He has found that many grocers will buy sufficient "Sunkist" oranges to secure banners and the usual advertising matter which goes with them, then go to the trouble of repacking inferior fruit in the "Sunkist" boxes. This policy has been discouraged, and while it may always continue to a certain extent the exchange will see that its rights are not set aside.

It is admitted by the management of the exchange that this campaign results in the selling of more California oranges and even more Florida oranges than would have been sold otherwise, that is, advertising of "Sunkist" oranges makes a market for all oranges. Of course, the great effort of the exchange is to burn in the word "Sunkist." The \$275,000 being spent annually on advertising by the exchange makes an investment on the part of the grower of a little more than one per cent of his income from oranges. Some large concerns which have been building up along the line of advertising have spent as high as 10 per cent or 15 per cent on advertising and still made great sums of money. One large automobile concern with a business of approximately \$20,000,000 or somewhat less than that of the exchange, has spent annually in excess of \$2,000,000 in advertising.

California oranges must claim the greatest place in the eastern fruit market. It will be secured because of the superior quality of this fruit and by a persistent and regular course of advertising which will inform the consumer of its quality.

PERMANENT AGRICULTURE

(Continued from Page 3.)

increase, their population. Almost exactly one-half of the people of Manhattan are foreign born. Less than 15 per cent have two American-born parents. Los Angeles has become the puritanic center of America; Boston is now the second Dublin of the world; Hoboken does not dare to have a parade on the Fourth of July. Unless our children occupy the country our grandchildren will not occupy the cities. It is the people who occupy the land who will eventually inherit the earth.

Unless conditions radically change in three generations, or by 2015, the majority of our people will be descendants of peoples not now living in the United States. I do not say that the population will have retrograded; I trust it will have greatly improved, but I do assert that our progeny will be in the hopeless minority. The world has never before met the problem of enormous masses of people living in the cities. We can see the buffaloes disappearing, but we seem blind to our own fate.

We hear a good deal these days about the best men of nations being sacrificed in the terrible conflict that is now raging and the effect this is going to have on humanity. As a matter of fact this is of small consequence compared to what is going on in America (and elsewhere). The flower of the human race is unborn. It is not in the trenches.

About a week after the incident to which I have previously referred I was traveling across the prairies of western Kansas. Passing a boy, perhaps 14 years of age, possibly only 12, who was driving a load of wheat to the elevator, my companion remarked, "That boy is earning \$2.50 a day." He sat there as proud as a peacock. He was earning more than \$2.50 a day. The experience he is obtaining before reaching the age of 21 will be worth more to him than any bank account he will ever acquire.

The following are probably safe propositions:

No race nor any portion of any race increases abundantly unless the children are a material asset.

Farming is the one great industrial occupation in the United States where children are of economic advantage.

The training which children obtain in thus contributing to the family income is a factor of great importance to society. No equally efficient substitute for this training has yet been discovered.

In the long run it is of no particular advantage to any person to own a farm unless he intends to raise thereon a successful family.

Eventually society will probably, for its own protection, reserve the use of all agricultural lands for persons who wish to use them for that purpose.

What is said to be happening in Southeastern United States has happened, is happening and will continue to happen in many, indeed in most rural communities, unless there is a very great change in existing conditions. The only difference is that the color line does not exist and most people do not notice the changes which take place. It is however just as easy to trace them. Let us see what usually happens:

A farmer raises a family of from three to five children that are born while the parents are between the ages of 25 and 40. Assume the parents live until they are 70. Of necessity therefore the youngest member of the family is 30 years of age. Ordinarily all the members of the family have obtained a foothold in some other business or have acquired an earning capacity which they do not wish to sacrifice in order to accept the responsibility of the farm. The usual result is that some other nationality or race, with different economic, educational, social and religious ideals, takes the farm. With the death of the father the old Scotch Presbyterian or Irish Catholic disappears and the existing church languishes. Even if it is not a new race, but merely a plain American tenant, the condition is not much better; often it is worse.

Let us assume another case, which is the normal one, as is shown by insurance statistics. A farmer marries between the ages of 20 and 25, has four children before he becomes 40 and between the ages of 55 and 60 dies, possessed of a farm worth \$16,-



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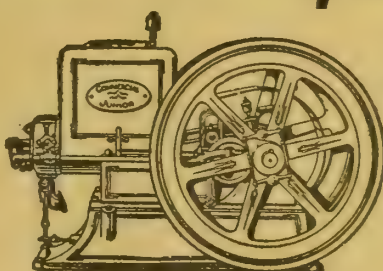
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Commercial Engine Co.

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Branch: 1228 "H" St., Fresno, Cal.

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See Announcement at Head of Editorial Page

000. Under these conditions he may readily have one son of the age to assume the management of the farm. What must the son do? Having inherited one-fourth of the property, he must assume the indebtedness of the other three heirs, or an obligation of \$12,000. If there were a system of finance by which he could spread the payments over say 30 or even 20 years he might be able to work his way out. Under present conditions a sale often occurs and the land passes into other hands.

If farms must be recapitalized at least three times in a century; if young men are born into the world without capital to finance them; if the permanence of society is dependent upon a rural population, not merely be-

cause it creates wealth, but because it grows children, then what are we going to do about it? To a man looking down from Mars without local prejudices it would seem that the system of finance which is so successful in other industries might be applied to agriculture.

The proposed land credit system is merely the well tried system of worldwide finance applied to agriculture. It is a means of putting farm mortgages on an investment basis. Stated in its briefest terms, it provides for loans payable in fixed annual sums of both principal and interest, secured by first mortgages on agricultural property, to approved borrowers and under approved conditions, for periods not to exceed, say 35 years, with interest at not less than, say, four per cent. To make this operative, the nation, state or community may create a land mortgage bank, with a trust fund, by legislative appropriation or otherwise. The trustees of this bank may issue and sell mortgage collateral bonds on the fund and on the mortgage securities of the fund not to exceed, say, 20 times the paid-up capital. The trustees may be authorized to frame regulations for the organization of rural credit associations and to make loans secured by first mortgages to members of such associations. These bonds may or may not be guaranteed by the nation or the state. Such guarantee would doubtless enable the sale of the bonds at a lower rate of interest, at least at the beginning, but it is not necessary to the operation of the land credit law.

Recently there came across my desk the annual statement of a life insurance company. Idly turning its pages I noticed that this company possesses \$258,000,000 worth of railway bonds. These are nothing more than debentures secured by mortgages on railway property. The only difference between these railway bonds and land credit bonds is that the railways never intend to pay back the principal, while in the case of the land credit bonds the principal must be paid back in annual installments covering a period of years, say anywhere from 20 to 35 years. It is proposed not only to build railroads, to establish manufacturing plants and department stores, to pave streets, to construct water works and power plants, to erect courthouses, hotels and apartments, and to install luxurious restaurants, most of which is now done with other people's money, but also by means of land credit to build in the open country comfortable homes containing children.

The arguments sometimes made against land credit systems that farm securities are not for various reasons looked upon favorably by banks and because of these unfavorable conditions higher and varying rates of interest must be charged, is the strongest possible argument in favor of land credit measures. It is proposed to give character to farm securities so that a higher rate of interest need not be charged. By creating a liquid asset it is proposed to make a uniform interest rate to all whether they are near or remote from great centers of capital.

How would this system work? Suppose the nation, state or community sells those collateral mortgage bonds at 4½ per cent and adds ½ per cent to cover expenses, thus charging the mortgagee 5 per cent, what annual payment would discharge the debt and interest in 25 years? Answer: Seven per cent of the principal.

Ambassador Herrick in his book on rural credit shows that in 12 countries the annual dues, including interest, cost of business and fraction of the principal required of the borrower for amortizing the debt, form an annuity of only 3½ to 7 per cent of the loan. In other words, the farmer in the countries named is given at least one generation, in some cases more than two generations, for paying back a loan, against three to five years in the United States, while the annuity is smaller on the average than the interest rate alone in the South and Western states." But the conditions are very different in other countries. Precisely so. That is exactly the reason that the conditions should be changed in this country. Under an efficient land credit system the rate of interest on farm mortgages will be dependent upon the money rates current in New York, London, Berlin and Paris, and

not upon the exigencies of a local bank. There is no more difficulty in Berlin dealing in American debentures secured by farm mortgages than those secured by railway mortgages.

The basic reason for issuing collateral bonds against land, as for issuing railway or industrial bonds, is that it is not proper for banks to use their deposits for long-time loans. All long-time loans should be taken up by people who wish to invest their earnings. For years the savings of the people have been used in developing railways, manufacturing plants, department stores, public buildings and city streets. A large part of the development of private corporations as well as the public improvement of cities has been due to the savings of the people, borrowed largely at 4 to 5 per cent. The land credit plan is intended to allow the savings of the people to be invested in the land in order that a permanent agriculture may develop.

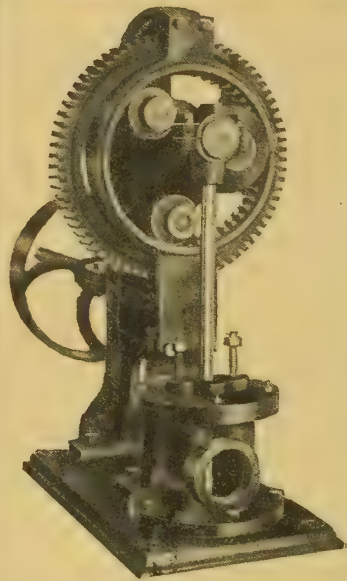
Men in cities now conduct great enterprises, enjoy comfortable transportation facilities, occupy luxurious offices and eat in sumptuous restaurants without having a dollar of their own money invested in these agencies except as they may carry life insurance or invest in stocks and bonds. The phenomenal development of the cities within recent years would have been impossible were this not so. Farming is the one great industry remaining in

which men commonly invest their own money in order to engage in the business.

Some months ago the Commonwealth Club of San Francisco spent a dinner and an evening discussing this subject of land credit. For several hours the pro-Allies and pro-Germans of this subject held sway. After it was over two Australians rushed up to me and said: "We have been very much interested in this discussion. We do all these things in Australia. From our point of view there is nothing to discuss. We do it now." So they do. So do 13 other countries.

Some high-minded but impulsive people have discussed seriously the bringing of Belgians to the United States and placing them upon the land. There is about as much probability of the Belgians coming to America in large numbers to settle upon the land as there is that this audience will migrate to Siberia. Any industrious Belgian farmer can borrow money at 4 per cent and have 60 years in which to pay it back.

While the leading nations of the world are in competition to retain and increase existing population we sit tight in smug content, promoting a system of finance and land development which leads inevitably to our own extinction without one gun ever being fired. To us the war in Europe is a small matter in comparison.



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Deciduous

Fruits

IS THE LINNET A PEST?

Written for California Cultivator by
H. C. Bryant, Game Expert, California Fish and Game Commission



Of all the native birds of California the linnets, or house-finch, is accused most widely of destroying cultivated crops. The fruit grower especially complains that the linnets not only eats the ripening fruit but also cuts the buds, thereby greatly reducing the crop.

On the other hand many people who do not grow fruit, but who are interested in bird life, defend the linnets as a beautiful songster. The rancher is therefore often in a quandary to know whether this bird should be protected or destroyed. Let us examine some of the evidence for and against the bird and then decide how to attack the problem.

There is no doubt that the linnets destroys fruit buds. Damage however is often overestimated. The United States biological survey in one of its publications dealing with the birds of California in relation to the fruit industry publishes several letters from prominent ranchers in the state reporting damage caused by this bird. The same publication, after giving the results of the examination of over 1200 stomachs, says: "Examination of linnets stomachs does not reveal any very considerable number of blossom buds, and it is probable that but little of the alleged mischief to fruit blossoms is done by this bird."

As a destroyer of fruit the linnets takes first rank. Several years ago a man reported to me that out of a crop of figs which netted 2000 pounds he had to send 500 pounds to the jam factory as bird-picked fruit. Here is apparently good evidence that linnets and perhaps other birds destroyed about one-fourth of this man's crop. Such evidence is convincing, but it must be remembered that the damage caused to a small isolated crop of fruit is much more apparent than that to a larger crop.

Probably the best method of preventing damage in such instances is that used by many ranchers in the vicinity of Fresno, where a practice of hiring boys and men to shoot linnets during the fruit season is made. This method is made inexpensive by using "shot cartridges" in some small-bore rifle such as a 22 or 32. Linnets are usually so numerous however that it takes a great deal of patient work to make any impression on their numbers.

The poison method is always an exceedingly dangerous one and should be avoided wherever possible. Not only are the lives of all other birds endangered but also domestic animals and even human beings.

On the other hand it should be borne in mind that in many districts fruit is not grown to any extent and the depredations of linnets are unknown. Many people in these sections very naturally frown upon any attempt to destroy the bird which they find a seed-eater and beautiful songster.

Then, too, as has been the case in almost every instance where depredations of birds are concerned, much evidence has been of the circumstantial type. When linnets are seen in a budding peach tree the rancher immediately infers that they must be destroying fruit buds. Later on if the crop does not come up to that of a former year he immediately blames the linnets. Without doubt the linnets oftentimes does some damage in destroying buds, but the evidence should be clear before any attempt to reduce their numbers is made. It is an easy matter to test your suspicions. You can either examine the stomach-contents yourself or send it preserved in alcohol to the university, where an examination will be made and a report sent you.

If you think that linnets are destroying the buds on your fruit trees, or the fruit, take the trouble to obtain absolute evidence. Kill some of the birds and examine the stomachs in order to prove or disprove your theory. Meet the emergency then by either defending the bird as a seed-destroyer and a beautiful songster or by reducing the numbers by shooting.

The farmer who takes a middle ground and appreciates both of the points of view discussed above and who tests his evidence comes nearest taking the proper stand in regard to the linnets.

METHODS OF QUICKENING THE GERMINATION OF SEEDS

It is almost always desirable to hasten the germination of seeds, not only that plants may be obtained more quickly, but also that their long exposure to the enemies which exist in the soil and destroy them, or many of them, if seeds are allowed to remain in the ground too long before germinating, may be avoided. As a general rule the fresher seeds are, the quicker they germinate, and with the exception of the cases here enumerated it

is desirable to sow, as far as possible, the last seeds to ripen on any given plant. The exceptions are

First—Where double flowers are desired, as in the case of zinnias, china asters, etc.

Second—Where plants are likely to be ruined by an excess of growth at the expense of heading, such as in the case of lettuce, cabbage, etc.

Third—Where plants are liable to produce leaves at the expense of flowers and fruits, as in the case of tomatoes, cucumbers, melons, etc.

Other things being equal, seeds preserved in their natural envelopes up to the time of planting germinate much better and more quickly than those which have been washed and preserved without covering, even if kept in paper or cloth bags in a dry, equable temperature. With few exceptions all seeds with fleshy coats should be preserved in their natural covering as long as possible. When their natural covering is removed, if the planting time has not come, it is always safe to place the seeds between layers of fine sand containing at least 10 per cent of humidity and so preserve them from direct contact with the atmosphere. Seeds of the grapevine washed and dried at the time the fruit ripened and then placed in bags and sown the following spring, germinated only in the proportion of eight to ten to the 100 the first year, while others did not germinate until the second or third year. The plants produced by these had the seed-leaves nearly always blotched with white. A part of the same seed preserved in their pulp to the end of December and then placed in sand until the sowing time, germinated much more quickly and in the proportion of 75 to 80 in 100. The same precaution is necessary in the case of various large oily seeds, such as the seeds of oaks, the tea-plant, the camellia, laurels, chestnuts, beeches, etc., which lose in a large part their power of germination if preserved during the winter in bags, and require to be sown as soon as ripe, or, at least, to be preserved in sand, and so prepared for germination when the time for sowing arrives. This is the best method, too, in the case of seeds with bony, hard covering, which germinate slowly, such as the seeds of the olive and of most of the rose family, nut-bearing plants, etc. There are also a number of vegetable seeds which take a long time to germinate, such as those of the parsnip, carrot, sugar beet, parsley and tarragon; these are improved by being placed in layers of sand before planting, although their germination can be hastened by more active treatment. Many systems are in use for this purpose among gardeners. Sometimes good results are obtained by mixing seeds of this character with fine soil and then, after placing them in a pot or sack, plunging them for some time into hot water. Others soak such seeds for a longer or shorter time, varying from six to forty-eight hours, in tepid water, to which is added a little salt or chlorine. Some gardeners soak carrot and beet seeds in liquid manure for two or three days before sowing them. All such methods are generally good if they are carefully used.

I have read of certain Indian fakirs being able to cause seed to germinate in a few minutes with a little powder which they sell afterward to an astonished public without disclosing their secret. They are probably very skillful prestidigitators, and their process consists in changing the seed rapidly.

I do not recommend the method of hastening germination which consists in plunging seeds into water strongly impregnated with potassium or caustic soda. The strength of these salts is so great that if a coffee seed is dropped into a solution made with them germination takes place at the end of a few hours; but seeds so treated, instead of continuing to grow, perish when they are transferred to the soil.

It is said that electricity stimulates germination. Experiments which I have made in this direction have only given moderate results, although I recognize certain results which make me suppose that with proper appliances electricity would be a powerful and efficacious means of making old seeds or seeds with hard and bony coatings germinate quickly.

I have secured the germination of seeds in half the ordinary time by plunging them during a period varying from six to 36 hours, ac-

cording to the hardness of their coats, in water to which was added one-tenth of its volume of the liquid ammoniac of commerce.

Any process which facilitates the transformation of the starchy parts of the seed into glucose and renders it assimilable by the embryo, favors its development and hastens germination. Air, humidity and heat being the indispensable agents for this, it only remains to select the substances best suited to aid these agents in their work. That which appears to me the best is ammoniac. In practical application it is best applied in the form of fresh horse manure or horse manure refreshed with horse urine, which should be used either mixed with other substances or alone, and which for this purpose should be placed in a



FROM OLD TULARE

"Tulare, California, June 21, 1915.

Please find enclosed one dollar for the renewal of my subscription to the Cultivator. This marks the 22nd year that I have taken the paper and there is something to interest me every issue.

"Respectfully,

"C. EDMONDSON."

We hope Mr. Edmondson will continue to take the Cultivator for another 22 years and we assure him we will endeavor to merit his kind words and make the paper better with every year.

bed in a warm greenhouse. I have caused in this way the germination of pear and grape seeds, nuts, plumstones, almonds, the seeds of the coffee tree, of palms, sugar beets, peanuts, fraxinella and other seeds of slow germination in half the time needed to secure the germination of the same seeds sown in the ordinary condition. In the case of beets, beans, lupins, and other plants of the pulse family, the use of heated soil produces the most deplorable results on account of the rapid development of the cotyledons, which results in the breaking and destruction of many embryos when the seeds are treated in this way. For all such seeds it is recommended to immerse them for six or eight hours in slightly heated water, which softens the coating of the seed and facilitates the exit of the germ.

There are certainly many additions to make to the examples I have cited, my object being simply to indicate methods of making experiments through which, perhaps, results may be reached which will be of use to future generations of gardeners.—J. B. Weber in the Revue Horticole.

THE JORDAN ALMOND

Written for California Cultivator
By J. W. Mills

The Jordan almond has not met with much favor in California for two reasons. First, while it is an early bearer it is also an early bloomer, one of the earliest, hence is very liable to be caught by the frost. Secondly, it is a sure enough hard shell and is only

marketable to the trade in the kernel, and being long and slender it is more liable to breakage when the cracking is done by machinery. In 1912 I ordered 400 pounds of hard shell almonds for nursery planting and half of the order delivered were Jordan.

FROM AUSTRALASIA

In our issue of May 13 we referred to complaint in a recent issue of an Australian paper because of the quarantine by our state horticultural commission on fruits intended for the Panama Pacific Exposition. The Australians would doubtless have exercised great care and would have chosen their fruit from districts in which there was no Australian fruit fly. However, we supported the attitude of our horticultural commissioner because the magnitude and importance of the California fruit industry justified this extreme action. Of course to a certain extent the regulation worked a hardship on the Australian people. They wished to show the great advantage of their country as a fruit producing section, and our exposition is for the purpose of encouraging just such demonstrations. Referring to our article Mr. Frederick Maskew wrote commending the attitude of the Cultivator and calling attention to the importance of our fruit industry: "I am sending you clipping taken from the Sydney (New South Wales) Herald, in its issue of March 26, 1915:

"On all sides there appears to be a prejudice making itself felt against New South Wales fruits. First of all New Zealand, then the United States, and now South Australia are having laws enforced to protect their own fruit industry and also to prevent the spread of the dreaded fruit fly pest. One would naturally think that in this state the most stringent regulations would be enforced and every endeavor made to wipe out this pest. It is not perhaps a good policy to advertise the

fact that we have such a pest, but unless growers recognize the necessity for more stringent enforcement of the fruit pests act and assist the inspectors in their work the fruit industry must suffer. It is strange that the greatest enemy to the fruit grower's interest is the fruit grower himself.

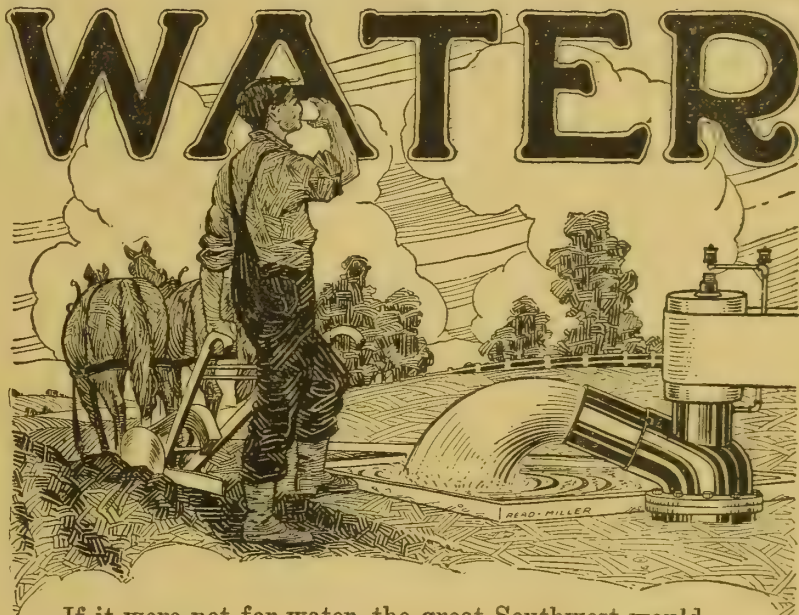
"Why does the imported fruit from oversea or neighboring states give our fruit such a setback on our own markets? Simply because the growers from those parts have long since learned to understand what freedom from disease, packing and grading mean. Fruit fly is certainly bad in many of our districts. In the Hawkesbury, Patterson and other coastal districts after January one finds growers picking peaches and soft fruits as hard as nails so as not to incur loss from the pest. Late fruit cannot be grown to perfection because of the pest. The kerosene trap method of attracting fruit flies is admitted to be a splendid means of suppression, but the number of growers using these traps is not commensurate with the advantages gained. What an admission! And yet many growers refuse to believe in fruit pest legislation. In point of fact the matter is not regarded seriously enough. Penal clauses should be included in the act, if not already there, but when available they should be enforced."

From this it will be seen that the attitude of other countries is similar to that of California and, best of all, right thinking people appreciate the need of just such action, even if their interests are in the quarantined country.

QUERULOUSNESS.

"What are your politics?"

"It depends a great deal on who happened to make the speech I read last," replied the querulous person. "I'm getting so that every time I read anybody's speech I find something in it that makes me feel like voting for somebody else."



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Small Fruits

Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator by O. M. Morris

JULY is really the harvest month for the earlier planted crops. As soon as these crops are harvested the ground should be thoroughly cleaned off and if possible summer fallowed or plowed up. If there is plenty of water available for irrigation it is advisable to flood the ground and then plow and harrow.

If planted soon there is yet time to mature a bean crop. For inland valleys the tepary would in all probability be best; however, the Mexican pink or the little navy will mature satisfactorily. Corn, either field or sugar, potatoes, lettuce and most other vegetables can be planted for early fall crop. It is advisable to use the earlier maturing varieties of corn. For field corn best varieties would be Wisconsin White Dent, King Phillip or Yellow Flint, as these will succeed better than any of the other varieties. Any of the varieties of sugar corn can be grown.

Cabbage and cauliflower should be sown for plants for late summer planting. These will be ready to transplant in about six weeks, also winter peppers and tomatoes. Probably the best pepper for planting now would be the large bell; of tomatoes would recommend Earliana and Chalk's Early Jewell.

As soon as new potatoes are thoroughly ripened they may be planted any time up to the 15th of August, though the sooner they are in the better. It is essential that the seed be thoroughly ripened before planting. It is best to spread out under trees or in the shade in thin layers on the ground and allow to ripen in this manner. It will ripen much more quickly than if left in piles and will not be so apt to rot. To avoid scab dip potatoes in a solution of formaldehyde, even though they show no signs of the disease. The process is inexpensive and most profitable.

An industry which is looking toward this coast for its future supply is that of pickled cauliflower. This vegetable has been a very uncertain crop throughout the Eastern states, and certain large pickling factories are now looking to California. This vegetable is packed down in salt brine and shipped in casks to the factory, handled in a manner similar to cucumber pickling. We are informed by one concern that they imported from Southern France 800 large casks of this pickled cauliflower last season but because of war conditions they are forced to look elsewhere for this season's supply. Cauliflower for early fall and winter is a fairly sure crop in this district. Up to the present it has been handled exclusively as a fresh product, being shipped East for winter vegetable supply.

UNDERSTANDING THE SPUD BUSINESS.

By Eugene H. Grubb in Denver Field and Farm.

As I travel around the country I do not see that the people are of one type or of one mind or in any way disposed to cooperate to any extent, whether in securing uniform seed, raising a uniform variety of given product, cooperating to develop the same breeds or to keep the weed pests out or disease down. Each man, true to the spirit of American independence, seems to be doing things in his own way. Of course my specialty is potatoes and I am working night and day to bring something out of nothing so that some day the American people will come to realize the true value of the spud in all its important relationship to our national economics and domestic efficiency as to the cost of living.

The first thing to remember is that seed potatoes must often be procured from some new source. They run out and must be renewed every few years.

We are gradually learning how potato diseases spread and these must be combated. Storing them in a cellar where diseased potatoes were kept the year before, cutting healthy seed potatoes with the same blade that has passed through an inoculated spud, running them through a planter with a diseased potato here and there, are some of the ways by which whole fields are contaminated at once. Letting the ground become wet and soggy, lack of cultivation to loosen it up and get the sunshine and air into it, planting good seed on ground where a diseased crop grew the year before are some of the mistakes men are making and for which they are paying a terrible sacrifice.

It appears to me all the more distressing when I see these things developing on new farms where conditions ought to be nearly perfect. I have made a number of trips abroad, studying agriculture on those old farms in England, Scotland and Germany

The Lawn and



Flower Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator By O. M. Morris

FLOWERING perennials for winter and spring bedding should be planted. If possible sow the seed under lath covering or in beds which may be temporarily shaded. Penstemons, digitalis, coreopsis, snapdragons, and plants of this nature may be left in this bed, if thinly planted, until wanted for re-bedding in the winter. A convenient small bed could be constructed of footboards, making a cold frame and covering with either burlap or muslin. Plant the seed in this and keep covered for the first 20 or 30 days, after which time the covering can be removed and the plants left in the bed until wanted in the fall and winter.

All bulbs that have dried down should be cared for now. Beds should be either mulched over with straw or litter for all tender bulbs, or if other planting is to be made in the same bed it is best to dig the bulbs up and store them. Such bulbs as daffodils, in fact, all the narcissus, if the bed can be kept perfectly dry, will summer through all right, but it is necessary that they have no water until growth starts in the fall. If watering is continued the bulbs are apt to go blind the next season, that is, they will give no flowers the following season.

Pansies and stock for early winter bloom should be put in within the next thirty days. Pansies should be planted in a well-protected bed—a cold frame would be best—with a good heavy shade or burlap covering. Stocks require but very light covering, but pansies must be kept thoroughly shaded and very wet at all times, at least for the first 30 days.

Shrubs and ornamental tree seeds may be planted. Most of these may be handled in the same manner as the perennials, allowing them to grow in the seed bed until wanted in the fall and winter.

Rake up the grass clippings and spread about your rose plants two or three inches deep. They will break the effect of the hot sun and aid in the retention of moisture. The secret of success with roses consists in the liberal use of plant food and repeated prunings to encourage development of new branches. Blossoms come only on new growth. Cut back each branch after flowering.

where they have been farming right along for 2000 years and are raising twice as much to the acre as we are, and always sure of their crops. There is much for us to learn and it is not to our credit to despise their methods. They use good seed; they prepare the ground scientifically; they plant carefully; they cultivate, harvest, sort, pack, sell and get the money. We work on a larger scale, make more mistakes, waste more and fall down more quickly.

We boast of 500 or 600 bushels of potatoes raised on an acre, but at the Dalmeney farms in Scotland they have run the record up to 2050 bushels on the measured acre. They understand their business so well and are so systematic that they can work along in their adverse climatic conditions and beat us two to one, and it is due to knowing how and doing it the best known way. I wish our farmers could be induced to cut down their acreage one half and give themselves the pleasure of farming the reduced acreage twice as well, doing less work on the half than they have been poorly doing on the whole, receiving as much income from the half as from the whole and at less expense. If they would try this for just one year they would get so much more satisfaction and profit that they would never return to the old slipshod way of farming.

ERADICATION OF DANDELIONS

The dandelion, like the poor, is always with us. To maintain a lawn free from this pest means in most parts of the country a constant warfare, and we have at present no methods of eradication to recommend which are easy or permanent. The following methods which are employed are more or less successful according to locality and the persistence with which they are followed.

Thick Seeding

Any means by which a thick, vigorous growth of lawn grass is maintained will greatly aid in the control of lawn weeds. Bare spots and thin sod invite a growth of weeds. Occasional sowing of new, clean grass seed, well raked into the bare spots, together with annual fertilizing, should be practiced.

Digging the Dandelions.

This, the most common control method employed, is quite effective in removing the large plants, if persistently followed and properly done. Unfortunately the piece of root left in the ground is capable of sending up one to six or more sprouts from the cut end, especially if not cut deeply. A one-inch chisel or long-bladed knife are suitable tools, and the work is easiest done after a rain or irrigation while the ground is soft. The plants should be cut as deeply as possible, and the plants destroyed to prevent ripening of the seed.

Spraying

The use of iron sulphate at the rate of one and a quarter pounds to the gallon of water, applied in the form of a fine, forcible spray upon the lawn has proven effective, at the agricultural college in this state, in greatly reducing the number of plants and in some cases entirely eradicating them. Three applications about ten days or two weeks apart should be given just after the lawn is mown. No water should be applied during the next 24 hours. The grass will turn dark at first, but soon recovers and usually appears more vigorous than before. This work appears to be the most effective when done during midsummer and early autumn. Gasoline applied with an oil-can at the rate of about a teaspoon in the crown of each plant is quite effective in killing the large plants, and is useful in conjunction with the other methods.—B. O. Longyear, Colorado Agricultural College, Fort Collins.



Panama-Pacific Exposition Night Illumination. View from Main Entrance. The Jewel City is Wonderfully Beautiful at Night.

COMING EVENTS

NEXT week is a busy one. A vast number of the events scheduled will have little interest for most of our readers but to give an idea of the inclusiveness of the program and special events we give almost entire special features. The following events are all within the dates of July 5-12 and so far in the exposition program mark its most interesting week.

Conventions

National Congress on Recreation, beginning Monday; National Editorial Association, beginning Monday; Navy League of the United States, beginning Monday; California High School Teachers' Association, beginning Monday; Pi Beta Phi Sorority, beginning Monday; Classical Association of Northern California, beginning Monday; Girls' Friendly Association of America, beginning Monday; International Press Congress, beginning Monday; Conference of Amateur Press Associations, beginning Monday; Alpha Chi Omega Sorority, beginning Monday; California Press Association, beginning Tuesday; Grand Interfraternity Council of the United States, beginning Tuesday; California State Rural Letter Carriers' Association, beginning Tuesday; California Drug Clerks' Association, beginning Tuesday; American Association of Museums, beginning Tuesday; Association of Retail Sheet Music Dealers of the United States, beginning Tuesday; Baptist Young People's Union, beginning Wednesday; National Leather and Shoe Finders' Association, beginning Wednesday; Gamma Eta Kappa Fraternity, beginning Wednesday; National Federation of Musical Clubs, beginning Thursday; Actors' Equality Association, beginning Thursday; International Milk Dealers' Association, beginning Thursday; National Council of Women Voters, beginning Thursday; American Association of Journalism Teachers, beginning Saturday; Philological Association of Pacific Coast and Modern Language Association of America, beginning Saturday; State University of Iowa Reunion, beginning Saturday; Theta Delta Chi Fraternity, beginning Saturday; Congress of Federal Suffrage Association, beginning Sunday.

Music

The world famous John Philip Sousa and his band of 80 musicians, daily. Also Conway's great band of 50 players. Philippine Constabulary band of 90 players, Marine Band, Great Exposition Orchestra of 80 pieces and daily recitals on the \$50,000 exposition pipe organ.

Special Days and Special Events

Monday—Independence Day Celebration; Playground Boy's Week; Ancient Order of Hibernians Field Day.

Tuesday—Grand Interfraternity Council Day; Shoe and Leather Industries Day; Pacific Coast Press Association Day; Kalamazoo, Michigan, Day.

Wednesday—Bridgeport, Connecticut, Day; International Conference of Women Workers to Promote Peace Day; Nevada Day; Redding, Pennsylvania Day; California Press Association Day; Lowell, Massachusetts, Day; International Milk Dealers' Association Day.

Thursday—"The Trojan Women," a tragedy of war and peace, presented by the Chicago Little Theater Co., Thursday and Friday nights; Gamma Eta Kappa Day; Nashville, Tennessee, Day; Virginia Day; National Federation of Musical Clubs Day.

Friday—Actors' Day; Erie, Pennsylvania, Day and Springfield, Massachusetts, Day; Theta Delta Chi Day; Elks Day; Great Celebration; Baptist Young People's Union Day; Panama-Pacific International Exposition Tennis Championships; Press Club Day.

The following week's program is not yet fully announced but one event of interest to viticulturists of California is the International Viticultural Congress, which will be held in San Francisco, July 12-13. Several thousand wine makers and vineyardists from every state in the union and from many over-sea nations, will take part in the campaign of world-wide publicity which will be inaugurated to make the fermented juice of the grape the universal table drink. A special train of wine-makers will come from New York.

Another great day which religious people the world over are planning for is The Lord's Day Congress, which will be held July 27 to August 1. Noted men from 21 foreign nations will be present at this congress. Sunday excursions and theatrical performances, together with commercialized Sunday amusements, saloons, etc., will be discussed from the standpoint that they are foes of Sunday rest laws.

OF AGRICULTURAL NOTE

Among the more important agricultural conferences to be attended by experts of international note, may be mentioned the Society for the Promotion of Agricultural Science, August 7; The American Society of Agronomy, August 9; Association of American Agricultural Colleges and Experiment Stations, August 11; American Farm Management Association, August 9; International Congress of Farm Women, August 31; American Pomological Society, September 1 and the Universal Corn Convention, August 5 to 6.

It is interesting to note that of the 325 gatherings, 528 are national in character and 57 international, with but 172 strictly California conventions. The remainder include those of Pacific Coast activities.

Today, Thursday, is Oregon Cherry Day.

Exhibited by a concessionaire is a hog motor which is a sort of cafeteria for swine where the hog must do the work or get nothing to eat.

The Dogs of All Nations are shown by another concessionaire who has arranged as an attractive feature a series of trials.

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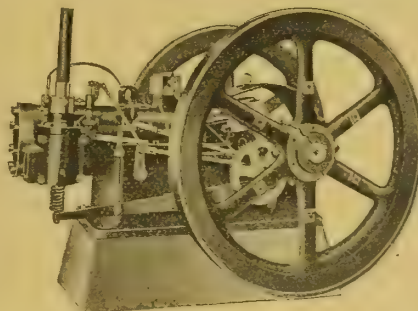
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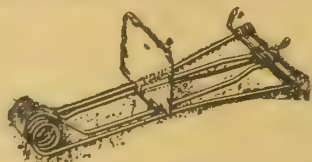
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Farm Bureaus

Kern County, R. R. Mack, Adviser, Bakersfield

McFarland, Director P. M. Peterson, Friday, July 2, 8 p. m.

Wasco, Director W. T. Fowler, Monday, July 5, 8 p. m.

Delano, Director R. H. Hiett, Wednesday, July 7, 8 p. m.

Rio Bravo, Director F. W. Haag, Saturday, July 10, 8 p. m.

Panama, Director A. B. Robinson, Monday, July 12, 8 p. m.

Rosedale, Director J. Waters, Wednesday, July 14, 8 p. m.

Tehachapi, Director L. T. Jenkins, Tuesday, July 20, 8 p. m.

Muroc, Director C. E. Clark, Wednesday, July 21, 8 p. m.

Willow Springs, Director C. S. Millar, Thursday, July 22, 8 p. m.

Bakersfield, Director M. J. Adams, Saturday, July 24, 2 p. m.

Arvin, Director R. Haven, Monday, July 26, 8 p. m.

Shafter, Director E. U. Combs, Wednesday, July 28, 8 p. m.

Kern County is conducting a thorough campaign against the Russian thistle, the ground bur nut, the sand-bur grass and the spring cockle-bur. For carrying on the work the county is divided into districts and in each one an inspector is appointed, not only to notify farmers of the presence of the pests in their fields, but to explain most effective methods of getting rid of them.

Contracts are being signed up by dairymen who are interested in the formation of a cow testing association, first quarterly payment to be made by members on July 1. Members having 50 or more cows pay at the rate of \$1 per cow per year; those having less than 50 pay \$1.25.

Solano County, J. W. Mills, Adviser, Fairfield

Rio Vista, July 6.

Cordelia, July 8.

Suisun, July 13.

Vallejo, July 15.

Vacaville, July 20.

Dixon, July 22.

Benicia, July 27.

San Diego County, H. A. Weinland, Adviser, San Diego

Bonsall, Friday, July 2.

Jamacha, El Cajon, Dehesa, cooperative picnic, Saturday, July 3.

Encinitas, Tuesday, July 6.

Fallbrook, Wednesday, July 7.

Dehesa, Friday, July 9.

Alpine, Monday, July 12.

Ramona, Wednesday, July 14.

Spring Valley, Friday, July 16.

Nestor, Monday, July 19.

Poway, Wednesday, July 21.

Jamacha, Friday, July 23.

Potrero, Monday, July 26.

Otay, Wednesday, July 28.

El Cajon, Friday, July 30.

The farm adviser will be in the office in San Diego every Saturday in the month and can be interviewed by any one who wishes to talk over farm topics.

Napa County, H. J. Baade, Adviser, Napa

Coombsville, July 1.

Salvador, July 3.

Browns Valley, July 7.

Calistoga, July 8.

Soscol, July 9.

Soda Canon, Napa, directors' meeting, July 10.

Carneros, July 12.

Fly District, July 14.

Wooden Valley, July 17.

Rutherford, July 19.

St. Helena, July 21.

Pope Valley, July 23.

Mount George, July 24.

During the month of July the subject of "Modern Rural Schools" will be discussed at the farm center meetings. The majority of the school houses in this county were built 20 or 30 years ago, thus making them far from modern structures. The interest the farmers are showing in this movement is more than timely and we hope that much good may result from these meetings during this month.

The squirrel campaign which we are conducting in this county is meeting with more than satisfactory results. The farmers are very ready and willing to take up this work. The poison barley which we have been furnishing has been sold to the farmers at six cents per pound, this being

the cost of the materials necessary for its preparation.

The farm center meetings will be held throughout the summer as usual and we anticipate better attendance than during the winter because of better roads. I find that usually we have on an average of 50 persons in attendance at the meetings. We have 16 such centers. Thus you will see that this work is reaching the majority of the farmers in the county, and I might state that the farmers are not of a disposition that they are so often given credit for, namely, unwilling to be shown or have new points of farming brought to their attention.

One thing that more than anything else limits the possibilities of my work in this county is the time element, there being more calls at all times than I can attend to, even though the horticultural commissioner has been very kind in answering some calls.

I have during the past ten months secured positions on the ranches for approximately 125 men who were out of employment. In this way the farm adviser movement has in this county helped to a certain extent to solve the labor problem in bringing the farmer who wants help and the unemployed in touch with one another.

It appears to me that the position of farm adviser has unlimited possibilities. A person might be especially well trained in veterinary science and in this way more than pay for the money expended by the county for his expenses, or he might be an expert in cooperative movements showing the farmers how to cooperate and in this way again making the movement very popular and successful.

I have so far found that a farm adviser must necessarily be a person who has been reared or partially educated on the farm or he will not be able to meet the requirements the farmers demand.

Yolo County, Niles P. Searls, Adviser, Woodland

Esparto, Wednesday, July 7.

Rumsey, Thursday, July 8.

West Sacramento, Friday, July 9.

Winters, Monday, July 12.

Madison, Tuesday, July 13.

Davis, Wednesday, July 14.

Clarksburg, Monday, July 19.

Knights Landing, Wednesday, July 21.

Woodland, Thursday, July 29.

Yolo, Wednesday, July 28.

Not discouraged by the dissolution of the Yolo County Cow Testing Association, several of the old members have announced their intention of securing the necessary help from the University Farm in this county and keeping up their herd books. It is believed that a student can be obtained each Saturday who will be glad to run the tests on three or four herds a month.

As soon as the requisite number of cows can be again procured, the testing association will be started. There is no likelihood of this being possible before next spring. There have been sold about 200 cows from the association number, and at present they can not be replaced.

Madera County, Thomas C. Mayhew, Adviser, Madera

Madera, July 2.

Dixieland, July 6.

Fairmead, July 9.

Chowchilla, July 12.

Eastin, July 15.

Raymond, July 20.

Nippinnawassie, July 22.

Oakhurst, July 27.

Coarse Gold, July 28.

North Fork, July 29.

The farm adviser will not take his vacation during the summer months. Inasmuch as the weather conditions are more favorable to visiting than in the winter work will continue during the summer.

As to the value of the farm bureau's work in Madera County we quote from the Madera Tribune:

"The social value of the farm units throughout Madera County is something that is vividly brought home to a stranger who attends one of them. Whether at Alpha, Fairmead, Chowchilla, Oakhurst, Eastin, Coarse Gold or any of the other units the pleasant social atmosphere that sur-



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rounds these meetings is one of their chief charms. Always a little volunteer program is put on, of music, singing, recitations, or story telling. The meetings are presided over by one of the members of the unit. Farm Adviser T. C. Mayhew makes a little talk, sometimes on the value and importance of agriculture, sometimes taking up some specific subject, such as an insect pest, or one of the many other problems that come before a farmer in his work.

"People who ordinarily would have but a nodding acquaintance with each other are brought close together, they talk over matters of interest, exchange experiences and derive benefits from such intercourse that are incalculable."

Glenn County, W. H. Heileman, Adviser, Willows

Bayliss, July 1 and 2.

Ord, July 5 and 6.

Larkin, July 8 and 9.

Codora, July 12 and 13.

Jacinto, July 15 and 16.

Dates after July 20 will be filled according to the needs of the work throughout the county.

Arrangements have been made whereby the Bayliss center will hold a meeting the first Friday evening of each month, the Larkin will hold a meeting the second Friday evening, and the Jacinto center will hold a meeting on the third Friday evening of each month. The Ord center will hold its meeting on the first Tuesday night of each month, the Codora the second Tuesday night, and the Orland center the third Tuesday night of each month. The effect of this is to establish regular night meetings for each center throughout the county.

The monthly directors' meeting will be held at Willows at 10 a. m., July 7. The county board of supervisors have been invited to attend this directors' meeting and take luncheon with the farm bureau officers.

During the month the various centers in Glenn County have made progress in their drainage and power extension campaigns and have been working on the organization of dairy and hog breeders' associations. The farm centers in the county are taking up the method of discussing some special problem or crop at each meeting. One of the centers is making concerted effort for the extension of rural free mail delivery.

As rapidly as the organization of the dairy and hog interests of the county are completed, effort will be made for the establishment of cow-testing associations, and also a study will be made of marketing conditions throughout the county.

On July 5 the Ord-Bayliss-Jacinto farm centers will hold a celebration and picnic on the Sacramento river, about two miles north of Ord. The Codora and Larkin farm centers will also hold a celebration on the Sacramento river, adjacent to the Butte City road. These celebrations will be some miles apart and are so located as to permit attendance from different parts of the county. These farm center celebrations have been advertised throughout the county, and invitation is being extended to everybody who wishes to enjoy a day of recreation. A good program has been assured and very satisfactory arrangements have been made for caring for the people. Speakers from the university will be in attendance at these celebrations.

IF DAD COULD!

The impecunious artist had brought home a little bottle of medicine for his small daughter. It was unpleasant looking stuff, and she demurred at taking it.

"But," pleaded her father, "poor old dad has spent his last dollar for this medicine."

Touched the little child took the draught.

But a little later she sidled up to her father. "Dad," she said, "if—if you fink you could afford it, I'd like to frow this up."

It is remarkable how a few shrubs, flowers and trees will add to the value of the farm home. In no other way that we know can a few dollars enhance the value of the farm and make the place a more desirable home. When we think of it, isn't it strange that there should be any homes without trees, shrubs and flowers?

Questions

THE EDITOR



and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Leaf Spot Fungus

I enclose leaf from mammoth blackberries affected with the leaf spot. Will spraying control the trouble, and will it affect the berries?—Subscriber, Yorba Linda.

Prof. H. S. Fawcett answers: "The blackberry leaves appear to be affected with the leaf spot fungus, *Septoria rubi*. Professor R. E. Smith recommends as a treatment for this disease spraying with Bordeaux mixture three or four times at short intervals of about ten days, the first application being used when the buds are beginning to unfold. I do not believe any particular good would be accomplished by spraying at this time. It might be well however to burn the affected leaves in the fall after they drop off."

Ticks in Chicken House

Am sending you ticks from an old chicken-coop. There are thousands of them in cracks and crevices of old coops which have not been used for months.—Subscriber, Kern County.

These are good, healthy specimens of chicken ticks, one of the most persistent pests once they are established in an old chicken house. In "Poultry for Profit," Mrs. Jean A. Koethen gives the following: "The tick or bedbug of poultry closely resembles the bedbug found in dwelling houses. It is found only in certain localities, usually on very sandy soil, but where it does exist it is a terrible pest. The Maine station's bulletin on poultry management says the sprays recommended for mites will destroy ticks as well, but California poultrymen have found painting or spraying the infested house with corrosive sublimate solution (eight ounces of corrosive sublimate to 20 gallons of water) the most effective remedy. When houses can be tightly closed they may be fumigated with sulphur or formaldehyde or with the cyanide process used for citrus trees. With ticks as with other pests the best remedy is prevention. A house that is kept perfectly clean is not likely to be infested."

"Green Lady Bugs"

I am greatly troubled with green lady bugs, sometimes greenish with black spots and sometimes with black stripes. They are on cucumber and other vines.—Subscriber, Corning.

We trust our subscriber at Corning will not slander the beneficial little lady bug by connecting it in any way with diabrotica, which is green

with black stripes or spots. This is always injurious, while the lady bug is the farmer's friend. The lady bug is usually yellow or orange in color and should always be protected. These fellows with the black spots or stripes should be destroyed. We would refer our inquirer to the Cultivator of June 24, 1915, regarding their control.

Slobbers

What is the cause of slobbers and how cured?—E. H., Manteca.

If E. H. had given name we would have been glad to have sent copy of the Cultivator of June 17, 1915, which gives information regarding this trouble.

Fraudulent Use of Mails

If one believes the United States mails are being used to spread information regarding fraudulent schemes and wishes to notify the proper authorities who should be informed?—Subscriber, Orange County.

Write at once to Post Office Inspector, 319 Federal Building, Los Angeles.

Poisoning Squirrels

Have used strychnine in watermelons, oranges, etc., but perhaps I used too much. What is proper dosage for half an orange or a pound of wheat?—Subscriber, Upland.

Regarding poisoned grain we presume the best formula is the one recommended by the United States marine hospital service. Some years ago it made a fight against ground squirrels in this state because of the fact that they carry ticks which spread bubonic plague. This formula is as follows: Whole barley, 20 pounds; starch paste, one pint; strychnine sulphate, one ounce; saccharine, one dram. The barley is placed in a receptacle large enough to permit thorough stirring (as a wash tub). One pint of water is then brought to a boil and sufficient laundry starch (about two tablespoons dissolved in

a little cold water) is slowly added to form, when well cooked, a paste about the consistency of cream. The strychnine (first powdered if in crystals) and the saccharine, are now added to the hot starch paste and the mixture well stirred until dissolved. While still hot this is poured over the barley, mixed well, and the whole put aside for several hours before using. Scatter a teaspoon of the poisoned grain along the squirrel trails on hard places near the holes. The poison should not be placed in heaps on the soft mounds at the mouths of the holes. It will probably be found most efficient if scattered early in the morning between the hours of three and seven a. m. Poisoned grain should not be placed in wet weather. Its destructive properties will not deteriorate with age so long as the grain is kept dry and free from moisture.

In using strychnine with fruits care must be taken not to smear over the surface because this will make the fruit bitter and the pests will not eat sufficient to cause death. As a rule a bit of the powdered strychnine on the point of a knife, put under the skin of a fruit or hidden as far as possible in whatever form the fruit is given, succeeds the best. Always leave some portion of the fruit not poisoned so that the taste for more may be encouraged.

Not Moulting.

What does it indicate when I find my hens with a thick growth of new feathers in the middle of June, without having dropped their old feathers? They stopped laying a month ago, but are healthy and vigorous. Can I hope for fall eggs from them or will they moult this fall? It's a new wrinkle to me and I wonder whether I had better sell them off.—Subscriber, Inglewood.

Evidently the feed you have been giving your hens has gone to make feathers rather than eggs, why I cannot say without knowing more of the history of the hens. If they have not dropped their old feathers they must drop them sooner or later, but are you perfectly certain that they have not dropped them a few at a time? It may be that you have been feeding heavily of oil meals and other forcing foods. Sometimes such feeding induces a moult at the wrong time, but I never heard of its causing a spring moult. If your hens were hatched in the fall this might help to account for an eccentric moult. There is considerable uncertainty about the first moult of

(Continued on Page 19.)

Not Too Late to Plant Tepary Beans

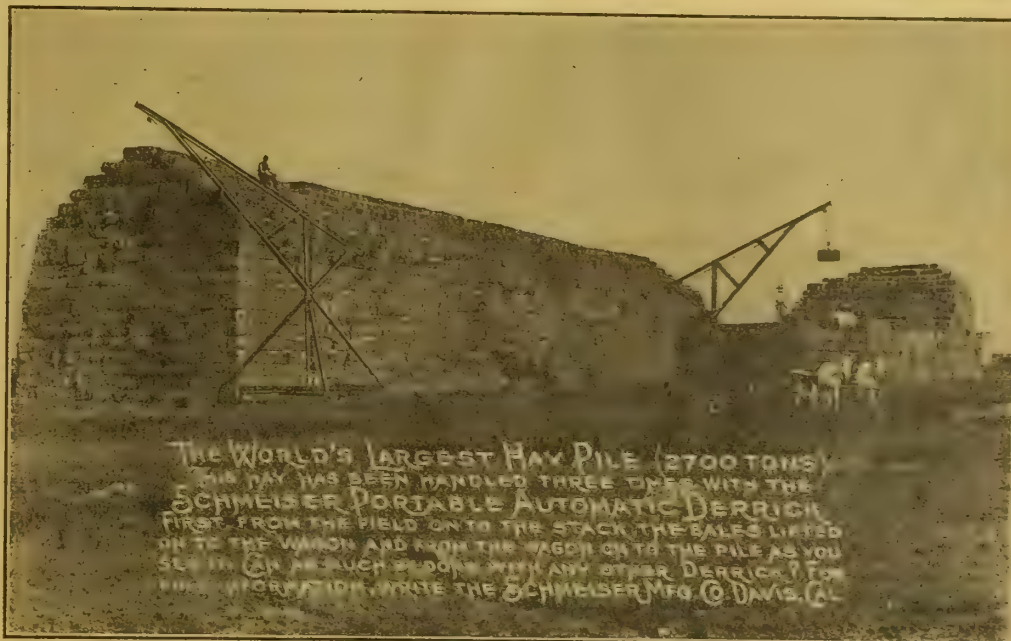
1 lb. 25¢; 5 lbs. \$1.00; 10 lbs. \$1.80 F. O. B. Los Angeles Supply Limited.

Plant after the hay or grain is off and get a paying second crop from the land.

WEST COAST SEED HOUSE

116 E. 7th St.

Los Angeles, Calif.



Established 1888. Twenty-seventh Year.

The California CultivatorRural Californian Combined with the
California CultivatorA Journal of Horticulture and
Agriculture

By

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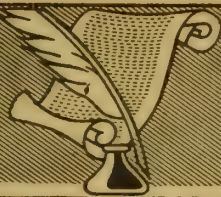
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geles, California, as Second-Class Matter.**Thursday, July 1, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling dif-
ferences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**EXPERIMENTS ON ALKALI**In "Experiments on Alkali Soil
Treatment" a preliminary report is be-
ing mailed by the University of Cali-
fornia press. It is by Professors Lip-
man and Sharp. The paper is a tech-
nical one, giving description of vari-
ous experiments tending to show, in
a word, the possibility of using cheap
sulphuric acid to reclaim alkali land.
This report has much of novelty and
we hope a great deal of utility in its
suggestions. It will be followed by
a more complete report of experiments
yet being carried on.**TRADEMARKED GOODS**Some months ago seven dif-
ferent farm publications with circula-
tions in different parts of the coun-
try made a canvass amongst their
subscribers as to purchases of adver-
tised, especially trademarked, goods.
The canvass shows conclusively that
once the public is informed of the real
quality of any trademarked goods it
prefers to pay an increased price for
the insurance given by such goods. It
is also interesting to note that as a
result of this canvass California shows
a larger percentage of sales of brands
of advertised goods than any other
state. For example in the matter of
soaps the brand which is probably bet-
ter advertised than any other received
by far the greater number of votes, or
rather in the return as to purchases
made this particular brand was strong-
ly in the lead. In California, out of
293 answers 61 preferred Ghirardelli's
chocolate. Competing, or other brands
in the market, numbered 28. One
point which the consumer recognizes
is that the concern that throws thou-
sands and sometimes millions into ad-
vertising cannot afford to jeopardize
its reputation by ever putting out an
inferior article.**AN ADVANCE IN FUMIGATION**For more than a quarter of a
century fumigation has been used to
a degree at least in controlling fruit
insects, especially those of the citrus
orchard. It took many years of in-
vestigation and practice to perfect
it, and even yet it is not perfect in its
workings. Originally it was found that
the effect of the light on the hydro-
cyanic acid gas was such that the
work must be done at night. Since
then it has been one perpetual fight as
to form and material for tents which
would give efficient service. Leakage
has been considered in every dosage
table and still must be.This however, we believe is in a
large part overcome by a process
which has been used with more or
less success for the past year or two.
This, in a word, is a machine for mix-
ing the liquids and injecting the gas
underneath the tent and doing it in-
stantaneously instead of by the usual
slow process conducted in a vessel
underneath the tent. The slow gen-
eration in the vessel required about
15 minutes to secure the entire
strength of the gas. This permitted,
with the best of tents, a loss of more
or less of some of the first gas gener-
ated before the other was added to it.
Now the entire strength is placed with-
in the tent instantly. We use the
word "instantly" advisedly for the rea-
son that once the liquid cyanide of
potassium, or rather sodium, is mixed
with the diluted acid an explosion re-
sults and every bit of gas is injected
within the tent.This means that from the very first
moment of treatment the full strength
of the gas is operating on the insects.
Of course leaking will result, as in the
former case, but it takes a longer time
to dilute the gas below the point of
efficiency.It is to be hoped that one result of
this new appliance will be to make
possible the use of lighter dosage,
which means economy, likewise less
injury to fruit and to tree. Some en-
thusiasts believe that this means also
daylight fumigation, which again will
add to the economy and certainty of
the work. However, methods for the
time being will be much as formerly
excepting the use of the machine for
instantaneous generation.**DON'T BE DISCOURAGED**What the California cured fruit
producer will do with his fruit this
year is a problem with which he is
wrestling at this moment. If he can
pull through a season such as this
promises to be and make the expenses
of curing and marketing his fruit, he
will prove himself a most worthy busi-
ness man. The market which has
heretofore taken the greater portion
of the California cured fruit product
is closed either by the war or by lack
of funds. If the American consumer
were in a better position financially
he would be able to handle much of
California's surplus, but with such a
year as this his purchasing power is
very low and it seems that even a well
directed advertising campaign would
have little effect in inducing greater
consumption.As a rule the grower is sitting tight
and making no unfavorable contracts.
The Kings County growers recently
gathered and discussed a proposition
which has been made to them by a
packing company, but finally decided
to keep their products entirely within
their own hands unless a more favor-
able proposition were made. In this
they were certainly wise, for accord-ing to the terms of the agreement
which this concern wished the grow-
ers to sign, fixed charges were to be
made to the growers as follows: For
receiving, grading and sacking
peaches, apricots and prunes, one-
fourth cent per pound; receiving, grad-
ing and packing in 50-pound boxes,
one-half cent per pound; in 25-pound
boxes, unfaced, five-eighths cents per
pound, and the same, faced, seven-
eighths cents per pound. An over-
head charge of \$4.00 per ton will be
made, and a selling charge of \$3.00
per ton, and in addition six per cent
of the returns will be deducted to
cover what are known as trade dis-
counts. A storage charge of 50 cents
per ton will be made on crops held
after February 1, 1916.In presenting this matter the com-
pany wished the growers to under-
stand the prices would probably be
extremely low, in any case not to ex-
ceed three and a half cents per pound
for peaches in the sack. At such
figures and with such charges the
growers could secure better results by
turning hogs into their orchards to
eat up the waste. In any case don't
let a shipper tie up a contract which
will cause a greater loss, and don't be
discouraged.**DON'T BE BUNCOED**The time was when the farmer
was the butt of all jokes, and unfor-
tunately it often seemed justly, be-
cause of his being an easy mark. But
the professional man and the financier,
especially the financier, have been
caught so many times that the farmer
can smile and look at the other fellow.
Perhaps warning might be given along
various lines, but particularly we wish
to give a warning which the Cultiva-
tor has given before, that is in the
matter of plugging trees. For a score
of years we have been giving warning
of the fact that this process was, so
far as could be determined, worthless,
and yet is it everlastingly bobbing up.
A few weeks ago we repeated the cau-
tion given many years ago. We are
glad that our state university is mak-
ing an investigation of a new propo-
sition for ridding trees of insect pests
by placing a substance in a hole bored
into the heart of the tree.Prof. George P. Gray has the matter
in hand and reports the latest material
offered to the public along this line
—which it is not necessary to name
—but it is safe for the orchardist to
keep in mind that these methods will
bear investigation before he ruins an
orchard by boring the trees full of
holes. The powder referred to has
been analyzed at the state university
and shows the following content: Po-
tassium nitrate (saltpeter), 2 parts;
sulphur, 5 parts; iron compounds
(chiefly oxide and carbonate), 1 part.Prof. Gray adds: "It is evidently a
fake of the crudest sort. The circulars
accompanying the package make such
sweeping claims and are gotten up in
such a crude manner that I believe any
thoughtful person would immedi-
ately classify the "remedy" as a fake.
The ingredients in themselves are com-
paratively harmless so that the user
is, in this respect, only humbugged at
the rate of \$2.00 a pound. The most
serious part of this propaganda, how-
ever, is the very doubtful practice of
indiscriminately plugging the trees.
It is believed that great harm can be
done in this way which may not be
manifest for a year or more. I no-
tice that this matter of plugging trees
was discussed in the California Cultiva-
tor of April 22, 1915."The California insecticide law was
originally worded so as to protect the
consumer against just such frauds as
this. Amendments to the law, how-
ever, have made it very difficult to
effectually prevent the sale of such
materials which in themselves are
comparatively harmless even though
valueless as insecticides or fungi-
cides."**Agricultural Notes**The freight rate on Manila hemp,
from Manila to New York, has ad-
vanced since the war began from \$15
per ton to \$40.15.The coming olive crop in Andalusia
gives promise of being a very good
one. Producers also have a large
stock of oil on hand.Drouth has seriously damaged crops
of rice and hemp in the provinces of
Albay and Ambos Camarines in the
Philippines. The loss in rice alone is
estimated at \$5,000,000.A shipment of California ripe olives
was made to Australia on June 9.
Many inquiries have been received
from that country as to dehydrated
olives. The Australians call them de-
natured olives.The United Fruit Companies of Nova
Scotia, a cooperative society of or-
chardists and farmers throughout the
Annapolis Valley, have opened a store
in Halifax and will sell butter, eggs,
vegetables, apples, and other country
produce direct from the farms to the
producer.This year's sugar beet crop in the
United States was estimated by the
Department of Agriculture on June 1
at 6,290,000 tons. Colorado has the
largest acreage planted, 171,000 acres.
Michigan is second with 146,600; Cali-
fornia third with 128,900. The aver-
age yield indicated is 10.6 tons per
acre.A recent investigation into the cost
of sugar beet growing in England
showed that the expense incurred by
the farmer in growing an acre of sugar
beets was approximately \$40, repre-
senting a cost per ton of beets of \$4.15.
The charge for loading and transpor-
tation brought the cost of the beets de-
livered at the factory up to \$5.10 a ton.Since Japan has been in control of
Korea—renamed by it Chosen—syste-
matic afforestation has been under-
taken. The denudation of the moun-
tains has caused serious losses from
drouth and flood. April 3 has been
made a national holiday, an Arbor
Day, when everybody is encouraged to
plant trees. More than 12,000,000 were
planted on Arbor Day in 1913.American cotton intended for Rus-
sian factories has piled up in Vladi-
vostock awaiting the long haul over
the Siberian railway. A special com-
mission has been formed to expedite
transportation and distribute the raw
cotton to factories in the Moscow dis-
trict. This commission has been prom-
ised by the government the use of
ten cars per day, nevertheless the
factories fear they cannot operate con-
tinuously. They have been forced to
use much Caucasus cotton which is
of an inferior grade.German hops are mainly used in the
production of beer, and those which
are not so consumed at home are
shipped abroad. Beer drinking in Ger-
many, however, has declined and ex-
portation is interrupted. The prices re-
main low, while only the poorer grades
are sought. Inferior varieties from Al-
sace recently brought \$4.70 to \$5.50 per
100 pounds. The highest price obtained
for the best Bohemian variety (Saazer)
was only \$23 per 100 pounds. No re-
cent quotations for Bavarian hops have
been given, but the prices obtained
since the war have been poor, offering
a marked contrast to the record price
of \$107.30 for the best sort in the year
1911. Hop culture declined in some
districts of southern Germany about
25 per cent. The decline in Bohemia
is reported as even greater.

Agricultural News Notes



of the Pacific Coast

Northern California

Entries for the poultry show to be held at the Panama-Pacific exposition close October 15.

Over 1000 people attended the cherry carnival of the San Juan Ridge in Nevada County.

The Alameda County farm bureau held its annual picnic and election of officers at Newark Park, Saturday, June 19.

The Gravenstein Apple Show at Sebastopol is to be made an eight-day affair this year. It will open on Saturday, August 14.

Nearly 100,000 pounds of hops were disposed of within the past two weeks in Sonoma and Mendocino Counties. Contracts have been made at 12 cents.

Swine breeders of Solano County met at Dixon June 16 to organize a swine breeders' association. The meeting was called by Farm Adviser Mills.

Governor Johnson has signed the Chinese egg bill. Under the provisions of the bill the word "imported" must be stamped on all egg cases containing foreign eggs.

A poultry, livestock, agricultural and mineral exposition has been planned for Redding early in September. Committees have been appointed to arrange for the various exhibits.

The new head of the agricultural engineering department of the University of California has been selected in the person of J. B. Davidson, who has held a similar position at Ames, Iowa.

At the sweet pea flower show held in the Palace of Horticulture on the exposition grounds at San Francisco 1500 vases of flowers were displayed. The American Sweet Pea Society directed the show.

Two hundred dollars is to be given in cash prizes for almond displays at the Esparto almond festival. G. W. Pierce of Davis has been named chairman of the county committee on arrangements.

Grain growers are facing a serious shortage in bags. A large consignment is expected to arrive from Calcutta very soon but this will not meet the demand. Harvesting has begun in several sections.

Berry picking in the Gold Ridge and Green Valley sections of Sonoma County is now on, and large quantities are being shipped to Eastern and Southern points. Growers expect to realize good prices for the season's crop.

Speaking of the increase in acreage planted to rice in the Sacramento Valley since 1912 C. E. Chambliss, a rice expert connected with the United States department of agriculture, said that in three years the acreage had increased from 1400 to 30,000.

The American Poultry Association will hold its next annual meeting in San Francisco November 14-21. Other poultry organizations which will meet during the same month are the American Buff Plymouth Rock Club, November 18; American Buff Plymouth Club, Pacific Coast Division, November 18; Buff Minorca Club of America, November 20, and the American Pigeon Fanciers' Association, November 24.

Central California

There is a movement to organize the Salinas Valley Cattle Association.

Dairymen in the vicinity of Tulare received over \$80,000 for May deliveries of cream.

Fumigation work against gray scale in Tulare County will commence about July 15.

Denair now has the largest local farm bureau in Stanislaus County. It has 125 members.

The board of directors of Stanislaus County has been requested to appoint a county statistician.

There will be a meeting of the Modesto farm bureau on July 6 at the Modesto irrigation district offices.

Santa Clara County growers estimate their county will produce 62 per cent of the prune crop of the state.

Stanislaus County has 16 local branches of the county farm bureau, with an enrollment of more than 20 per cent of farmers of the county.

The board of supervisors of Monterey County has appropriated \$1000 to aid in construction of trails in the Monterey national forest as a fire protection.

Members of the Chowchilla unit of the Madera County farm bureau are buying grain bags cooperatively. Members will also buy a threshing machine to be held in common.

The district fair association of Fresno County and the city beautiful committee of Fresno will cooperate in a flower show. Seven hundred dollars is to be offered in premiums for best cut flowers.

The fruit standardization bill passed by the last legislature becomes effective August 7. After that date all green fruit packed for shipment outside the state must come up to the standard of quality and packing.

The Woodlake, Tulare County, Co-operative Cannery has perfected its organization by election of the following officers: W. P. Crumley, president; James H. Blair, vice president; J. G. Ropes, secretary-treasurer.

Fresno has been designated as an inspection point for plants sent by parcel post. F. P. Roullard has been appointed inspector at Fresno. Bakersfield, Madera and Hanford also have been named as inspection points.

The Associated Raisin Company is reported to have taken over the Farmers' Union packing plant at Dinuba, Fresno County. This is the last of the independent packing plants in that city, others having already been taken over by the Associated.

Immigration Commissioner Caminetti announces that the employment departments established by the United States government through the local post offices have resulted in finding enough laborers to harvest all the crops in the Sacramento and San Joaquin Valleys.

The state highway commission has advised Kings County that as soon as the county is ready to buy \$50,000 worth of highway bonds, work on the lateral will be started in this county. The extra amount is necessary owing to the fact that the road will cost \$105,000 instead of \$70,000.

Southern California

Both fruit canneries of Pomona will open the first of the month.

Brawley ships a carload of mixed vegetables by express daily.

More than a third of the Valencia crop of Southern California orchards has been marketed.

Cotton is being shipped from Brawley to New Orleans for export at the rate of two carloads a day.

Dairymen members of the San Diego County farm bureau are contemplating formation of a cow testing association.

The Almond Growers' Association of Banning is expecting a very large crop this year. They will be obliged to increase warehouse facilities to handle it.

Four mountain lions were killed by N. W. Palmer in the southern part of San Luis Obispo County, after the lions had killed 14 of his Angora goats. The bounty will amount to \$80.

Manager Dreher of the San Antonio Fruit Growers' Exchange says that prices now being received for Valencia oranges are the highest for this time of the year for six seasons past.

Horticultural Commissioner Beers of Santa Barbara County says that the walnut blight which appeared so serious earlier in the season is largely disappearing as the warm weather comes on.

Orange County is talking of forming a bean growers' association. The plan is to install bean machinery in orange packing houses as the oranges will be out of the way in time for the bean harvest.

Prices of feed, prices of eggs, and farm cost accounting were the three main topics of discussion at the meeting of the Arlington poultry association recently held at the Arlington public library.

Instead of the 50,000 acres of beans which directors of the Lima Bean Growers' Association set as the minimum with which the association could conduct business only about 35,000 were signed up.

Beet dumps will be opened about July 20 to take care of the beet crop of Garden Grove, Orange County. It is stated that the yield in that section will average one ton per acre over last year's.

One lemon orchard at Corona, Riverside County, has a section containing over seven acres covered with tobacco cloth. The installation of this feature of lemon growing costs in excess of \$400 per acre.

The report that withdrawn lands in Imperial Valley were to be thrown open to settlement immediately has been officially denied by Gratz Helm, in charge of adjustment of rights of the settlers to certain of the withdrawn lands.

The El Cajon Valley News states that Game Warden Toms has given out information that the law that protects cottontail rabbits will not be enforced against ranchers who find it necessary to kill the rabbits in order to protect their crops. It is said that the animals are increasing very rapidly and are becoming a pest in many localities.

The Coast

Utah will have the biggest sugar beet crop in its history, both as to acreage and yield.

Farmers of Higley, Arizona, are organizing a local branch of the farm improvement association.

One million pounds of wool changed hands at the first wool sale held at Pilot Rock, Oregon. The highest price paid for coarse wool was 26 5-8 cents.

Progressive dairymen in the Glendale district of Arizona are asking that an attempt be made to organize a cow testing association, to enable them to improve their herds.

Egg buyers of Portland have decided to buy eggs according to grade and to form an organization to educate farmers and country merchants in the advantages of producing and marketing eggs of quality.

Tillamook County, Oregon, produced almost 40,000,000 pounds of milk last year and manufactured 4,290,000 pounds of cheese. This makes Tillamook the banner cheese section of Oregon and the Northwest.

Petitions are being circulated by farmers and business men in Phoenix, Mesa, Gilbert and Roosevelt Districts asking the supervisors to support the office of the farm adviser. These have not all reported but in one locality approximately 200 men quickly signed up.

Mr. Leo, a rancher south of Higley, Arizona, secured an exceptionally good yield of wheat on desert land without irrigation by drilling it in rows about 16 to 20 inches apart and cultivating to conserve moisture. He is planning to secure a small tractor to plow and also to pump water.

Higley, Arizona, farmers are preparing to organize a local branch of the farm improvement association to secure better service from the county farm adviser. The adviser spent Saturday, June 19, visiting ranchers and attending a meeting of the Higley board of trade, which is boosting the proposition.

Wickenburg, Arizona, has petitioned through F. B. Jacobs to have a branch of the farm improvement association formed at that place. Fruit trees are being planted in considerable numbers and the ranchers want all the information available to enable them to avoid costly mistakes made in other fruit growing sections.

Seedmen and fruit growers in California have applied to the farm adviser for prices and samples on more than two carloads of sour clover seed. This product which has heretofore been a waste is now bringing \$2.50 per hundred, F. O. B. cars when pure and properly recleaned and local seedmen have offered as much as \$1.00 for the rough seed as it is screened out of wheat and barley by thrashing machines.

The Farmers' Educational and Co-operative Union, Local No. 1, in its regular meeting on May 22, held at Chandler, Arizona, decided to hold one open meeting each month for the purpose of cooperating with the farm adviser of Maricopa County.

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ALPHA ENGINES ARE IDEAL FOR farm use, because any one can operate them. Your wife or boy or hired man can use one of these engines without the least trouble, and do easily many small jobs that would otherwise require a lot of time and hard work. Alpha Engines will save you money by doing quickly those time-wasting jobs that ordinarily take you away from field work that is demanding your attention.

ASK FOR THE ALPHA ENGINE catalog. It will give you a lot of valuable information on the many superior and exclusive features of these engines, and will show you how to get more work done in less time and at less cost.

Live Stock and Dairy



MILKING THE COW



EARS of experience on dairy farms and seeing cows milked on many farms in the capacity of dairy tester have afforded a writer in Hoard's Dairyman opportunities for study of the relationship that should exist between the cow and her milker, and the various methods employed by milkers in drawing milk from the cow. From his experience he writes: "My father first taught me to milk as it is done in Holland. I believe there really is but one way to milk, namely, the right way.

"If the milker is seated squarely, in erect posture, on a well-made stool of convenient height (usually 10 to 13 inches) and just far enough from the cow that his arms will be almost fully extended when milking her, and if the cow is standing with her right hind leg set back, then the hands of the milker will be all that comes in contact with the cow during the process of milking. The average farmer should at least clean the litter and dirt off the flank and udder before milking. The milk pail should be held between the knees of the milker and not more than six inches below the teats. Finger nails should be well trimmed. Milking with moist hands is filthy and inexcusable.

"The milk should be drawn by pressure of the full hands encircling the teat. Milking with the full hand is often impossible with heifers and then stripping must be resorted to. The udder should not be swayed or pulled downward but should be held almost motionless. If the arms or wrists of the milker get tired while milking, then resting his elbows on his thighs may be helpful. "The cow that does not kick over the milk pail when her hinder parts are bobbing up and down through the violence and inconsiderateness of the milker has many times more patience than her milker has judgment." The practice of holding the hand on the teat close against the udder tends to develop a teat of uniform thickness throughout. Stripping tends to taper the teat, and sometimes a sort of cushion forms where the teat is attached to the udder, for the lower part of the teat is drawn out in stripping.

"Whenever possible, milk from the fore quarters should be drawn first. Cows that yield most of the milk from the fore quarters are rare. As usually the cow lets down her milk more readily in the rear quarters and yields more milk from these, the tendency often is for the milker to draw this milk first. If this is done, the cow may yield even more milk from the rear quarters and develop a funnel-shaped udder. Drawing milk from a fore quarter on one side and from a rear quarter on the other side is practiced by some milkers. This may be all right if the quarters are begun alternately.

"All the milk that is let down into the teat should be drawn out with each pressure of the hand; if this is not done it may develop a hard milking cow. Try to milk a full stream that causes foam to rise in the pail without hurting the cow. If it hurts her, ease the pressure on her teat. Be especially careful not to hurt the cow if her teat is sore or if her udder is inflamed.

"When milking I like to watch the position of the cow's ears and her facial expression when she turns her head about. A milker should exhibit some of the same patience and affection toward the cow he milks as does the cow toward her calf. There should be harmony between the cow and her milker.

"Experience has taught me that the cow's udder can be milked dry with the full hand and that stripping is unnecessary. A few gentle pressures upward against the milk cistern usually bring down the last drops of milk. This is the method of calves. Every one knows that stripping requires more stripping; then why strip

at all? It is one of the pleasures of dairying to draw a large quantity of milk easily from a well-shaped teat and udder belonging to a well bred cow of good dairy type that is pleased to have one draw the milk from her at the regular hour."

SAN DIEGO COUNTY WILL HAVE

COW TESTING ASSOCIATION
By Farm Adviser H. A. Weinland.

Cow testing associations are becoming the regular thing among progressive dairymen of today. A cow testing association is an association of dairymen for the purpose of hiring a competent tester to determine whether the amount of butter fat produced by their cows is sufficient to warrant their keeping the cows for milk or cream producers and also to enable the dairymen to get better results with various foods, etc.

Cow testing associations are not new, although the first one was formed in Denmark 20 years ago. From that beginning it has spread until in 1909 there were over 1,500 in the European countries. The first association in the United States was organized in Michigan in 1905, 110 associations emanating therefrom by 1909. Many more have been formed since this time, there being at the present time nine in California.

The question often arises whether or not a dairyman cannot do his own testing. He can, of course, as the Babcock test for butter fat is a very simple one and very easily made, but of the many dairymen who own Babcock testers very few actually find time to use them regularly. The association for a nominal cost per cow provides a man who visits each dairy in the association once every month, tests the milk of each cow night and morning for its butterfat content, weighs the milk the cow is giving and estimates the feed she is consuming to furnish that amount of milk. He keeps an accurate record of this for each cow and for each herd, and at the end of the year has a record which will enable any dairyman to know which of his cows should be sent to the butcher and which are the ones whom he should save for calves.

The tester also makes test of the cream, tests the skim milk in order to determine whether the separator is working well and in many ways is in position to advise the dairymen as to methods of handling his dairy cattle in order to produce larger returns.

Where the testing association has been conducted for some time the results of the increase in returns is very striking; for example, in a dairy herd in Sweden an increase of over 4,000 pounds of milk in the average yield per cow was made as a result of the association's ten years of existence. The butter-fat average yield per cow increased 176 pounds per year; the cost of producing 100 pounds of milk was reduced 16 cents and cost of producing a pound of butter seven cents as a result of better feeding methods instigated by the work of the association.

The formation of an association was commenced in San Diego County, with meetings held by the farm adviser in San Pasqual, Ramona and Lakeside June 8, 9 and 10, at which meetings Prof. True of the animal husbandry division of the University of California was present. About 400 cows were signed up at the meetings and membership agreements were left with Mr. Herbert Judson of San Pasqual, Mr. Henry Baldwin of Ramona and Mr. William Miller of Lakeside, for the convenience of dairymen in each of the sections who were unable to attend the meeting. The tentative membership agreement can be signed by calling on the persons above mentioned or by indicating a desire to the farm adviser.

Six hundred cows are necessary to form an association. The price to begin with will be \$1.50 per cow per year, but as a tester can handle upwards of 1,000 cows, if more are obtained the price can be lowered by the

SILOS

BUILT FOR YOUR PARTICULAR NEEDS. EXACTLY AS YOU WANT THEM. ALL SIZES AND DIMENSIONS.

16x36 REDWOOD STAVE SILO MANUFACTURED BY US FOR THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, 1915

TANKS

BUILT TO ORDER, TO SUIT ALL USES AND USERS. CHEAPER THAN METAL TANKS. LAST LONGER, WON'T RUST. CAN BE TAKEN DOWN AND RE-ERECTED WITHOUT DAMAGE. CAPACITIES, 500 TO 500,000 GALLONS. TOWERS INCLUDED IF YOU WANT THEM.

ALL OUR SILOS, TANKS AND PIPE ARE DESIGNED BY ENGINEERS TO MEET EVERY CONDITION. MADE IN OUR BIG FACTORY FROM CLEAR, AIR DRIED REDWOOD. SELECTED FROM A STOCK OF 40 MILLION FEET WHICH WE CARRY AT ALL TIMES.

ASK US FOR PRICES

PIPE

MACHINE BANDED OR CONTINUOUS STAVE—FOR WATER SUPPLY—IRRIGATION OR POWER. CHEAPER THAN ANY OTHER PIPE OF EQUAL SIZE OR CAPACITY. LONGER LIVED THAN ANY METAL PIPE EXCEPT CAST IRON.

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LOS ANGELES, CAL.

FRUIT GROWERS HEADQUARTERS

When in Los Angeles, stay at Hotel Clark. Ideal location. One-half block from Central Park. Close to all stores. Extremely reasonable rates. 555 rooms with bath. Excellent grill service—popular prices.

Hill Street Between 4th and 5th.

board of directors later. Some of the associations after being established have been able to conduct their business for as low as 75 cents per cow per year.

SILAGE FOR PIGS

Some time ago the matter of silage for pigs was discussed in the Cultiva-

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Falcies, Exterior Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for
Sore Throat
Chest Cold
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Strains
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Diphtheria
Sore Lungs
Rheumatism
and
all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES
O'Connell, Tex.—"One bottle Caustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."
OTTO A. BEYER.
Price \$1.50 per bottle. Sold by druggists, or sent by express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Don't let Her Suffer from Flies

If you want to keep your cows comfortable and make bigger profits **Use Conkey's FLY KNOCKER**
5 gals., \$4.00; 1 gal., \$1.00, except at interior points.
If your dealer cannot supply you write Germain Seed and Plant Co., Los Angeles, or Coulson Poultry and Stock Food Co., Petaluma



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Is popular among dairymen who appreciate that Economical Production, Richness and Fine Flavor of products lead to larger profits. Try Guernseys and be satisfied.

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READY FOR SERVICE

1. Grand Son of Noble of Oaklands \$15,000 Bull.
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7 choice registered, tuberculin tested Shorthorn Bulls, 14 to 20 months old; all are good individuals, some are of show class type and of fine breeding. Call or address

H. L. MURPHY,
Perkins, Sacramento Co., Cal.

tor and we were given the name of the Huston Farms Company of Yolo County as a concern which had made extended experiments in ensilage for hogs. We wrote the company and from its manager, Mr. Pike, have the following:

"We are exclusively in the hog-raising business and everything we raise on our acreage is for the purpose of feeding the hogs. Ensilage was with us as a hog ration an experiment, but as it developed it was a most successful one from every standpoint. We constructed two 150-ton silos. These were filled with milo silage, which was used exclusively in conjunction with ground barley for the feeding of our farrowing and litter lot sows. We also used it quite extensively for the feeding of our weanlings, and it was simply astonishing the way this food was relished and the amount that would be consumed, particularly by the small and weanling pigs. Our findings were that it was a great milk producer for farrowing sows, and so well were we pleased with the results that we contemplate constructing two additional silos this fall, which we propose filling with kaffir corn ensilage. We feed about nine pounds each to the sows in the farrowing pens, and in our litter lots, where we keep the sows with their litters after leaving the farrowing pens (which lots have enclosures that permit the little pigs to eat by themselves), we figure on one pound per small pig per day. In these litter lots we feed on platforms, and this quantity, nine pounds to the sow and one pound for each little pig, is cleaned up every evening.

COTTON-SEED MEAL FOR HORSES

In answer to the inquiry "Is cottonseed meal good feed for horses?" Professor Foster of the New Mexico experiment station states that it is when fed in small quantities in combination with other concentrates. A number of southern experiment stations and horse owners report satisfactory results from feeding it to mares, colts, and driving horses at the rate of one pound per head daily, mixed with ground corn or other grain, and to work horses at the rate of two pounds per head daily, fed in the same manner.

The Iowa station found that when fed in connection with corn and oats, 1.1 pounds of cottonseed meal was equal to 1.4 pounds of linseed oil meal in maintaining the weight of the horses and enabling them to work; and that on account of its being less laxative than the oil meal it is better adapted to the needs of horses at hard work. Because of its high protein content and its peculiar flavor it gives most satisfactory results and is eaten with greater relish when fed in a mixture with some of the grains, such as corn, oats, milo or barley. In localities where alfalfa is the principal roughage, cottonseed meal is not needed to properly balance the ration for farm horses. Any of the grains mentioned are sufficient. Its value is more apparent where farmers must rely mainly on timothy or prairie hay or some of the coarse fodders for roughage.

A FEW THINGS TO DO TO BETTER LIVESTOCK

Treat cows gently and avoid excitement.

Be regular in time of milking.
Keep stables clean, well lighted and ventilated.

Weigh the milk of each cow at milking time.

Get your neighbor to share with you in owning a Babcock milk tester, and test the product of each cow.

Discard the animals which have failed at the end of the year to pay for their keep.

Breed your cows to a pure-bred, registered dairy bull from a family having large and profitable production of butter fat.

Raise well the heifer calves from cows which for one or more generations have made large and profitable productions of milk and butter fat.

Breed heifers to drop their first calves at 24 to 30 months of age. Give cows six or eight weeks' rest between lactation periods.

Join a dairy cattle breeders association. It will help you keep posted and in touch with the best and most modern ways of managing your dairy herd.
—George C. Humphrey, College of Agriculture, University of Wisconsin.

DEHORNING CALVES

Those who have had the experience of dehorning a bunch of cattle know that it is not a simple task. Furthermore, it involves more or less cruelty, saying nothing of the danger of losing an animal occasionally and the shrinkage that frequently accompanies the operation. It is much better to do the dehorning, as it were, be

fore there are any horns to take off. It involves a simple operation on calves when they are a few days old. At that time it causes but little discomfort, with absolutely no danger whatever of loss or accompanying shrinkage.

Any stockman can perform the simple operation. It is done by the use of caustic potash, which may be purchased in small sticks. Wet the end



You need a new DE LAVAL SEPARATOR NOW

1st If you are still using some gravity or setting process of creaming —

BECAUSE YOUR WASTE IS greatest and quality of product poorest in mid-summer when the milk supply is heaviest.

BECAUSE TIME IS OF GREAT-est value on the farm at this season and the time and labor saving of the good separator counts for most.

BECAUSE THE SKIM-MILK IS poorest without a separator in hot weather and often more harmful than helpful to calves.

BECAUSE THE WORK OF AN improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind —

BECAUSE THE LOSSES OF THE poor separator from incomplete skimming and the tainted product of the hard-to-clean and insanitary separator are greatest at this season.

BECAUSE OF THE GREAT economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

BECAUSE AN IMPROVED DE Laval is so much simpler and more

easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

BECAUSE THE DE LAVAL Separator of to-day is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot summer months.

These are all facts every De Laval local agent is glad of the opportunity to prove to any prospective buyer. If you don't know the nearest De Laval agency simply write the nearest main office, as below.

DE LAVAL DAIRY SUPPLY COMPANY

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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

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Manufacturers and
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Machinery, Silos and Appliances for the Dairy and Creamery

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SORE SHOULDER INSURANCE



If you could get insurance against your horses becoming sore-shouldered when most needed, you would take it at any reasonable price.

Why not take it FREE by using
W. DAVIS & SONS'

Horse Collars

"Felt-Face"each \$5.00
"Cushion" Collars.....each 3.00

This "Cushion" Collar is a combination of leather and canvas, guaranteed to cure sore shoulders and "stand the racket."

The "Felt-face" collar is all-leather, first-quality of oak-tannage, hand-thonged throughout. It has a facing of felt under the leather face, producing a soft yet firm surface against which the animal pulls.

It is natural for any manufacturer to say that his collars are "the best," but it is only about "FELT-FACE" collars that letters like this are written:

W. DAVIS & SONS, San Francisco.

Gentlemen:—I sold the Red Bands Orchard Co. two Felt-face collars about a month ago for two sore-neck mules which are all healed up now. They came in today and ordered one dozen. Please send me soon as possible 1½ dozen, from 17 to 22-inch.

Very truly,

W. F. INGWERSON,

(Harness-maker) Visalia, Cal.

A selling agent (dealer) in nearly every town. If none in your town, write us

W. DAVIS & SONS, 2052 Howard Street, San Francisco, Cal.

California's Largest Manufacturers of Harness, Collars, Saddles.

of one of these sticks and rub it over the miniature horn after clipping the hair away from that region. Rub it until the skin is red. The potash may have to be wet several times in order to get the skin over the horn considerably inflamed. A little care must be taken to prevent burning the fingers but this result may be avoided by wrapping that part of the potash stick that comes in contact with the fingers with paper or cloth. Care

should be taken not to use water enough so that it will run down the forehead or cheek of the animal because in that case it will remove the hair. If the work is properly done a small scab will form on top of the horn and when this comes off it will mean the death of the horn itself.—Wisconsin Farmer.

Chandler, Arizona, is making efforts to secure a sugar milk factory.



Avoid the Dangers of Stall Feeding

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine

I want to warn you in time that stock taken off pasture and put on dry feed are pretty apt to get out of fix, because corn, grain, hay and fodder do not contain the laxatives so abundantly supplied in grass.

Some of your animals are sure to become constipated, others off feed, rough in the hair, with paleness of the eyes, lips and nostrils, or the legs may stock or dropsical swellings of the abdomen appear, or the urine may become yellow and thick; but the common ailment of all is worms.

DR. HESS STOCK TONIC

Makes Stock Healthy. Expels Worms.

Being both a doctor of medicine and a veterinary scientist, I formulated Dr. Hess Stock Tonic to correct these evils. It contains a laxative substitute for grass, diuretics to remove dropsical swellings, tonics to improve the appetite and increase digestion and vermifuges to expel worms.

Right now is the time to feed Dr. Hess Stock Tonic, because it's the cow in the pink of condition that fills the milk pail, the steer with an appetite that lays on fat, the horse that digests its dinner that pulls on the bit.

So sure am I that Dr. Hess Stock Tonic will put your animals in a thriving condition, make the ailing ones healthy and expel the worms, that I have authorized your nearest dealer to supply you with enough for your stock, and if it does not do what I claim, return the empty packages and get your money back.

Dr. Hess Stock Tonic is never sold by peddlers—only reliable dealers; I save you peddler's salary and expenses, as these prices prove: West of Rockies: 25-lb. pail \$2.25; 100-lb. sack \$7.00. Smaller packages in proportion.

Send for my book that tells all about Dr. Hess Stock Tonic—it's free.

DR. HESS & CLARK, Ashland, Ohio

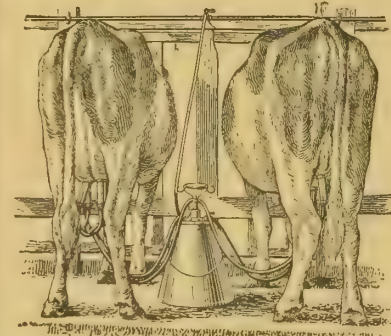
Milk 30 to 40 Cows per Hour

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Empire Mechanical Milker

One Man Operates it.

Simple, Easy to Install and Operate. You Gain Two Hours a Day with This Machine



Write To-day for Catalog "C" Telling about Empire Milkers

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26 FRONT STREET

PORTLAND, OREGON

Empire Cream Separator, new, up-to-date types, skim clean, run easy. Write for catalog. \$25.00 and up.

ANOTHER SALE OF HOLSTEINS

Mr. J. W. McAllister, Jr., who recently managed the successful Schumacher sale of Holsteins at Los Angeles, announces that there will be another great sale of Holsteins held at Sacramento this fall with some magnificent stock offered, much of it from the McAllister ranch at Chino. He writes:

"We expect to have over 70 females in the sale, a large number of whom will be bred to Tilly Alcartra Son. It will be remembered that the success of the Los Angeles sale which established a new average record for the West of \$414 per head was due to the fact that there were 24 females in calf to this bull. Although from \$400 to \$750 apiece was offered for the heifer calves sired by this bull, the options were exercised on but four. Tilly Alcartra Son is growing more and more in popularity every day and there have been as many as 50 head belonging to outside parties on the ranch at one time left to be bred to this bull."

Mr. McAllister states that there is apparently an increasing interest in California in the blacks and whites. The supply of Holsteins is not in any measure equal to the demand. Referring to sales recently made he says:

"One of these recent sales was the splendidly bred young bull, King Segis De Kol Mead, to the Whittier state school. We were very much gratified at this sale as it was the second herd header we had sold the state school in the past six months, and it was sold in competition with a number of bulls from some of the best herds in California and in the East. The dam of King Segis De Kol Mead has won grand championship at the California state fair and is one of the most noted show cows of the breed. She has three daughters with large yearly records, one of which has already broken two world's records. King Segis De Kol Mead will have a splendid opportunity in the Whittier state school herd and we expect to hear a great deal of his daughters when they come fresh."

KEEP THE SEPARATOR CLEAN

After six months' use the cream separator may still look clean and bright on the outside, but that does not always signify that it is all right inside. The gummy substance that is sure to accumulate around the gearing and bearings causes many a separator to be cast aside prematurely. If the owner would clean it thoroughly, readjust the bearings, and replace with new parts the small pieces which show most wear, the life time of many a separator would be doubled and the draft would be greatly diminished. The separators of today are simple enough so that the average farmer can take them apart and assemble without trouble.—Oklahoma Farmer.

Veterinary Queries



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Lung Worms

My cows and calves appear to have good health, eat heartily, give the usual amount of milk, but they have a cough. They are in wild pasture and have running water. What is the trouble, and is there danger of horses in the same pasture being affected?—Subscriber, Santa Clara.

The trouble is probably due to lung worms, verminous bronchitis. They get into the lungs from the grass on wet pastures. In warm weather the cattle go to the low lands for fresh grass and that is the time they seem to get them. The full history of the worm is not known, but when it is once in a pasture it is likely to bother the cattle every summer. If

the worms are not gotten out of the lungs, in time they will cause a discharge from the nose and you may be able to find some of the worms in the mucus. They are small, thread-like worms and sometimes grow to be two or three inches long. Turpentine seems to be the only medicine that will destroy them. For the cows, give two ounces of turpentine in a pint of sweet milk once a day. For the calves give half or one-fourth the amount, according to age. A better and quicker way to reach the worms is to use an hypodermic syringe and inject the turpentine clear. Inject a teaspoon of the turpentine directly into the wind-pipe by passing the needle of the syringe through the skin and between the rings of the wind-pipe. Hold the animal's head up for a moment until the turpentine runs down into the lungs. Two or three treatments of this kind will cure almost any case.

Mange

Mares and colts have skin trouble which causes intense itching. The horses will scratch against anything and bite themselves. The trouble is not so serious in cold weather.—Subscriber, Blythe.

The trouble is probably mange, which is due to a small mite in the skin. Wet the horses all over with a solution of zenoleum. Make the solution by adding a teacup of the zenoleum to two gallons of warm water. Rub it well into the hair and be sure to wet all parts. Repeat this once a week until four or five applications have been made.

Bloat

My cows bloat badly. Am feeding alfalfa hay, occasionally alfalfa meal and some barley. The cow gives four and a half gallons of milk.—Subscriber, Reedley.

Probably some of the alfalfa hay has rolled into a large ball in the first stomach, the rumen, and will not pass on, causing indigestion. Every time fresh food is taken fermentation starts and gas is formed. To empty the stomach of the mass, first reduce the feed. Feed no grain and only give dry hay that will require a great deal of chewing. Get the following medicines and give as directed: Raw linseed oil three quarts, turpentine 10 ounces and aloin three ounces. Mix, shake well and divide into five doses. Give one dose every three or four days. It may take some time to work the mass out of the stomach. Stirring up the contents of the stomach once or twice a day by pressing into the left side with the fists will help to break up the mass and hasten its moving out.

TEN SUGGESTIONS

Provide plenty of clean, dry nests for your hens.

Gather the eggs daily in cool weather and twice a day in hot or rainy weather.

Do not wash eggs. Use the dirty and small eggs at home.

Keep eggs in a cool, dry place, which is free from odors.

Don't sell eggs which have been in an incubator.

Market your eggs daily, if possible; if not, every other day.

Don't sell eggs which were found in a stolen nest. Use them at home.

Keep the eggs out of the sun when taking them to town.

Don't keep eggs near oil, onions, etc., as they readily absorb odors.

Kill or sell all roosters as soon as the hatching season is over.

ABSORBINE

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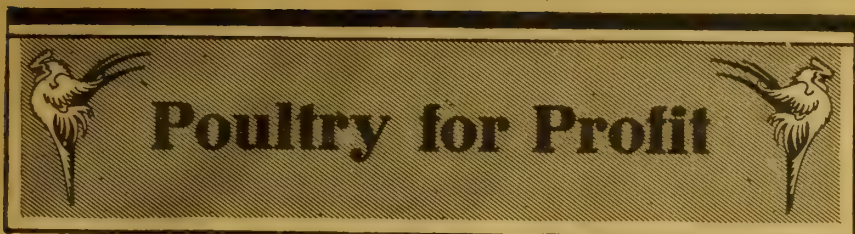
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INFERTILE EGGS

IT is conservatively estimated that there is an annual loss in eggs in this country of \$45,000,000. Practically all of this enormous loss is sustained by the farmers of this country, as it is on the general farms that the great bulk of eggs is produced. A very great part of this loss can be prevented by the production of infertile eggs which are laid by hens that do not have a male bird with them. The male bird has no influence whatever on the number of eggs laid. Therefore as soon as the hatching season is over the male should be removed from the flock.

The greatest trouble from blood rings in eggs occurs in hot weather. Special care should be given to the gathering and storing of the eggs during the late spring and summer months. At these times the eggs should be gathered at least twice a day, placed in a room or cellar where the temperature does not rise above 70 degrees Fahrenheit, and marketed two or three times a week.

Blood rings are caused by the development of the embryo of a fertile egg and its subsequent death. It is impossible to hatch an infertile egg or cause a blood ring to form in one. It is generally considered that eggs become infertile from seven to 14 days after the male bird is removed from the flock. Repeated experiments have shown that where fertile and infertile eggs are kept under similar conditions, the fertile eggs spoil much quicker, due to the fact that they deteriorate faster than infertile eggs in the average summer temperature. Summer heat has the same effect as the hen or incubator on fertile eggs. Sell, kill, or confine the male bird as soon as the hatching season is over.

A COMMON CAUSE OF CHICK LOSSES

That many poultrymen are mistaking a disease known as aspergillosis for bacillary white diarrhea is the belief of Helen Dow Whitaker, head of the poultry division of the state college of Washington. The confusion more readily results because fowls affected with either disease show diarrhea accompanied by a whitish discharge. In both cases affected birds mope about with drooping wings, are very weak and wish to drink constantly. Aspergillosis, or brooder pneumonia, as the disease is called when it affects very young chicks, is a disease of the respiratory system caused by a fungous growth which develops in the membranes of the nostrils, mouth and throat, finally affecting the lungs. It may in time extend to the digestive system, producing whitish or yellowish nodules in the tissues of the liver and even the intestines. Sometimes these spots are flat and slightly greenish in color, due to the growth of the mold on the surface of the diseased area. From the beginning the breathing of the bird is rapid and difficult. Death results from exhaustion or suffocation.

The disease is caused by eating musty or moldy food. The spores are most often found in the straw litter or chaff that the baby chicks are given to scratch in on the floors of their brooder, or in decaying vegetation, or in spoiled corn or corn meal. If there is an old straw or manure pile, or a rubbish heap to which fowls have access, the disease is likely to develop and one bird will transmit it to another. It is a disease difficult to cure and it hardly pays to try, especially in the case of brooder chicks which are so weakened that if they survive they seldom develop into anything but runts. The remedy that is generally used is to stir two tablespoons of wood tar into a quart of warm water. Let the mixture stand a few hours, then put the affected fowls into a closed box or room where the tar water is dropped upon a heated brick or stone, thus making a vapor which

the birds inhale. Care should be used not to smother the birds. It is also helpful to apply flowers of sulphur or tincture of iodine to the diseased passages in the mouth and throat. In all cases it is much better to burn than to bury the bodies of fowls that die with aspergillosis.

Since little can be done in successfully treating affected fowls, the purpose of this discussion is to warn poultrymen against packing eggs for hatching in moldy or damp material, against using incubators or brooders that have been stored where they might gather dampness during the winter without first thoroughly disinfecting them, and above all, against permitting fowls, young or old, access to any moldy litter, decayed vegetation, rubbish heaps, manure piles where the spores of the fungous that cause this disease may be found by them.

BACILLARY WHITE DIARRHEA OF CHICKS.

Bacillary white diarrhea of chicks is an infectious disease. It may be inherited from the parent stock or contracted by healthy chicks if brooded with affected chicks. The following statement concerning this disease is made by Helen Dow Whitaker, head of the poultry department of the state college of Washington, who believes that it is of vital importance that poultrymen throughout the West should learn to recognize this disease and stamp it out lest it become the dread scourge of Western flocks that it has of many in the East.

Chicks are most susceptible to the disease during the first two days after hatching, and most of the deaths occur under one month of age. The first symptoms are a tendency to huddle and to sleep. The chicks are listless, make very indifferent efforts to pick up food, their wings droop, and sometimes they show a decided thirst. The diarrhea may not appear for a day or two after the chicks show the other symptoms. The secretion is usually white but may be streaked with brown and generally is sticky enough to paste up the vent. There is no generally accepted cure for bacillary white diarrhea. All the buttermilk or sour milk that the chicks will drink from the second day on is the best preventive, together with proper care of the chicks and healthy breeding stock.

Any poultryman can determine quite accurately whether or not his mature stock is or has been infected with bacillary white diarrhea. Whenever hens are killed examination should be made of the ovaries. The ovary of a laying hen in shape resembles a bunch of grapes with a more or less completely developed ova or yolks attached like grapes to a common stock. In a healthy hen the undeveloped ova are similar to tapioca grains that have been soaked in water until they are transparent, except that they vary in size, some being as small as a pin point. The color of the developing ova varies from a light yellow to the color of the normal yolk. In a typical white diarrhea ovary the ova are usually more or less mottled so that almost all shades of yellow and brown may be seen. The contents of these discolored ova is a cheesy matter permeated by a clear amber colored fluid. Furthermore, the diseased ova are flattened or angular on the surface, while the normal ova appear round.

Poultrymen cannot be too careful in preventing the spread of this disease. The bodies of all infected birds should be immediately burned, not buried. It should be remembered that a pullet once infected and apparently entirely recovered will nevertheless transmit the disease to her chicks and it is the utmost folly to attempt to breed from infected birds. An infected bird in the laying pen is a constant source of danger since the germs may

cling to the shells of the eggs she lays, infest the droppings and hence the ground upon which she ranges.

FIFTH MISSOURI NATIONAL EGG-LAYING CONTEST

The state experiment station at Mountain Grove, Missouri, is sending announcement of its fifth national egg-laying contest. The test will begin November 1, 1915, and continue for 12 months. In the opening of this book, which contains rules and regulations of the contest, we note:

"These egg-laying contests have marked a new epoch in the history of the poultry industry. Before the egg-laying contests started poultry was bred largely in a haphazard manner so far as egg production was concerned, but today the breeders have adopted better methods, and by the use of the trap nests they are able to know definitely the pedigree of the chickens they raise. By knowing this they can select and breed both males and females from the hens which make the highest records.

"The breeders who enter pens in this egg-laying contest have an opportunity to raise chickens from their own hens which have officially certified records. This gives them a foundation to breed from which could not be secured in any other way."

The prizes are not large, \$50 in cash with a silver loving cup being the reward for the highest record for the 12 months' work of five pure bred pullets. However, in addition there are monthly premiums and other rewards which aid in carrying the expenses of the successful contestant.

HATCHING GUINEAS

Young guineas sometimes appear to be deformed when first hatched, and as a rule the apparent deformity is simply the result of a slow hatch. When chicken hens or incubators are used, it is an easy matter to give the eggs proper attention. Guineaes resent intrusion, especially while setting. This alone would be sufficient reason for hatching with chicken hens, or with incubators, although there is still another reason not given. Guinea hens if not controlled will drag the young guineas around through the grass in all kinds of weather, and the result can easily be imagined. Of course, young guineas need exercise, but they are very tender at first and should be kept out of wet grass or rain. They are far less apt to take gapes if kept dry. It is the same with chicks and turkeys. We have houses, not coops, for all the young poultry, and find that keeping the floors clean and dry is as important as keeping everything free of vermin. However, we are convinced that lice kill more young poultry than all the other causes combined.

During the first few days after guineas are hatched they have to be fed quite frequently. We feed a little every two hours. Dry bread, finely crumbled with a little chopped "greens," such as lettuce or onions, will always give good results. A little coarse sand is sprinkled over the feed at first, but this is not necessary after they have learned to eat grit whenever required. However, sharp sand and other grit should always be provided. Boiled eggs are not suitable food for young guineas, as they are almost sure to cause constipation. After they are a few days old they will eat oatmeal dry, or cornbread. A varied ration is better than any one feed. When they are a few weeks old they will eat cracked corn, whole wheat or whatever chicks will eat. When they are a month old they should not be fed more than three or four times a day, and if they have good range, a very little feed each time will be sufficient. In fact, they could get along on two feeds a day, but we like to teach them to come home for feed. They are great foragers, and if there are any grain fields near, they will make regular trips to pick up what they can find among the stubble. Guineaes, both old and young, are good bug-catchers and they will not injure garden crops as chickens are apt to do, because they rarely scratch unless grain is thrown among litter.—Poultry Tribune.

A DEFINITION

A smile: the lighting system of the face and the heating system of the heart.—April Woman's Home Companion.

A DOG STORY

We brought from Scotland a collie about six months old. He was allowed to be with us at the breakfast table, but never to be fed in the dining room. This rule was enforced by my daughter. I was the only member of the family who ever broke over the rule. And often when I offered him a tempting bone he would glance across the table and if he caught the forbidding eye he would resist the temptation. But one morning she left the table abruptly. Rab followed her into the hall and watched her till she had closed the door of her study. Then he scampered back, nudged my elbow, as if to say, "Now is our time," seized the bone and was soon crunching it with the greatest satisfaction.—London Spectator.

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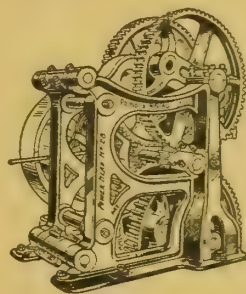
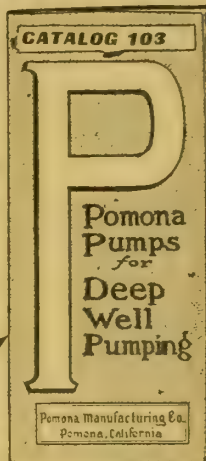
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N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

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HER SAD EXPERIENCE

"But why did you leave your last place?" the lady asked the would-be cook.

"To tell the truth, mum, I just couldn't stand the way the master an' the missus used to quarrel, mum."

"Dear me! Do you mean to say that they actually used to quarrel?"

"Yis, mun; all the time. When it wasn't me an' him it was me an' her."

New Books

ESSENTIALS OF AGRICULTURE

"Essentials of Agriculture," by Henry Jackson Waters, president of the Kansas agricultural college, published by Ginn & Company, Boston, at \$1.25. This is a book of nearly 500 pages, well printed and with an illustration on nearly every page. There are 37 chapters with a regular text and many chapters devoted to a valuable appendix. An idea of the scope of the book is given in its table of contents from which we quote titles of a few chapters: "The New Agriculture," "Better Plants and Animals," "How Plants Feed and Grow," "Plant Propagation," "Soil," "Manures and Fertilizers," "Small Grains," "Fiber Crops," "Grasses," "Legumes," "Forage Crops," "Roots," "Silos," "Orchards," "Wood Crop," "Plant Diseases." The first paragraph in Chapter I is quoted from Vergil, and as it touches agriculture as continued in America today we quote it entire:

"Here is a land where no bulls, breathing fire from their nostrils, have plowed the soil; where no enormous dragons' teeth were ever sown; where no human harvest started up, bristling with helmets and crowded lances; but teeming corn and the wine god's Massic juice have made it their own; its tenants are bursting crops and luxuriant herds of cattle. Hence comes the war horse that prances proudly into the battlefield. Hence the white flocks upon a thousand hills. Think, too, of stately cities and trophies of human toil and towns piled by man's hand with great rivers flowing beneath their honored walls. It is a land, too, which has disclosed streams of metal mantling in its veins, a land that has produced mortal tribes of heroic mold. Hail to thee, mighty mother of noble fruits and noble men."

The book is intended as a textbook and it is of a type which is invaluable for the farmer of today.

CONTROL OF CITRUS INSECTS

Prof. H. J. Quayle has for several years been making a study of insects affecting the citrus industry. The result of his investigations is now chronicled in Circular 129, "The Control of Citrus Insects." In his opening paragraph touching upon fumigation he says:

"Fumigation is the most satisfactory treatment for the control of scale insects on citrus trees. The denseness of foliage and compactness of growth of citrus trees make them well suited for a gas treatment within an enclosed tent covering. Most citrus growers are not so directly interested in the details of the fumigation processes because such work has been usually done by contract, by the local Fruit Growers' Exchange, or by an association. However, the growers themselves should understand enough of the essentials of the fumigation work to pass proper judgment on the character of such work. As compared with other necessary operations in the citrus grove, such as cultivating, irrigating, pruning, and fertilizing most growers know the least about fumigating."

The author then refers to the various methods of working out fumigation satisfactorily and also gives extended description of the fumigation machine and the cyanofumer. The bulletin may be had by addressing the Agricultural Experiment Station, College of Agriculture, Berkeley.

THE AVOCADO IN CALIFORNIA

Part I of Bulletin 254 of the agricultural experiment station, Berkeley, "The Avocado in California," is written by Prof. I. J. Condit and treats upon the culture, production and marketing of California avocados. In Part II Prof. M. E. Jaffa discusses the composition and food value of the fruit. The great interest in avocados will doubtless call for wide distribution of this bulletin. It is illustrated with several engravings showing clusters of the fruit, large trees, method of growing trees in nursery, and different types of fruit.

The bulletin may be had by addressing the state experiment station, College of Agriculture, Berkeley.

QUESTIONS AND ANSWERS

(Continued from Page 11)

fall pullets. Moulting time is supposed to come at the end of the first season's laying and fall pullets which begin to lay in the spring are apt to moult late in the fall. I remember mine last year began to moult in December. It would be possible, I suppose, for extra good layers to postpone their moulting till spring, but if you have noticed no feathers on the ground I cannot believe that this is a real moult. Whether or not you sell these hens off ought to depend I think on their age and productivity. If they are two-year-old hens and have stopped laying entirely it would hardly seem worth while to keep many of them. If they are last year's pullets and have done good work I should not be in a hurry to get rid of them. It may be that they will begin laying soon and not go into the regular moult till winter. I have heard that many Leghorns moult twice a year in this warm climate, but mine did not.—J. A. K.

Soaking Barley

Having a request for information regarding feeding value of barley soaked 12 hours as compared with rolled barley, we have asked a stock feeder of the Sacramento Valley regarding his experience in the matter. He writes:

"I do not know of any feeding experiments bearing directly on the question as to whether whole barley soaked 12 hours is as satisfactory a feed for horses and hogs as rolled barley. I have seen both rolled and soaked barley fed to stock on the same job, and if there was any difference as far as could be noted it was in favor of the soaked barley. There is some prejudice against feeding soaked barley to horses and mules, but I can see no reason for it. I would prefer soaked whole barley to rolled barley dry for hogs because I believe they would masticate it better. The whole problem is one of having the grain in the best condition to be acted on by the juices of the alimentary canal, and hard, dry barley is made more easy to chew up and masticate both by grinding and soaking. Most of the barley fed to horses through Central California is rolled, but I have seen a considerable amount soaked and fed with good results. The argument in favor of soaking is that it makes it easier to masticate and less of it passes through the animal whole.—W. S. G."

In addition we wrote Prof. F. W. Woll of the university farm at Davis and he answers:

"The practice of feeding soaked grain to horses and other farm stock was rather common a generation ago, but has now been generally abandoned. Farm animals with sound teeth are abundantly able to grind the dry grains, except in the case of small, hard seeds like barley, rye, millet, sorghum, etc., which had better be rolled or ground to avoid a waste of feed. In chewing the feed it is mixed with saliva in the mouth and the first step in digestion commences; if the feed is fed wet there is less secretion of saliva and no advantage is gained in point of digestibility. It is true that farm animals will eat larger quantities of soaked feed than of dry feed, but this is of importance only in the case of fattening or milk-producing animals that are forced to a maximum production and when the cost of feed is a minor consideration.

"The fact that soaking feed for farm stock is no longer practiced, except for swine in some cases, shows that the method is of no value as a general proposition. This applies with still greater force to cooking feed for farm animals; an occasional allowance of cooked or warm feed may be of value for regulating the bowels or for its tonic effect, but healthy stock with good teeth need no such special attention and will not give adequate returns for it."

Almonds Not Growing

This spring I planted seven almond trees of different varieties and at this writing, June 5, none have grown, except to put out the first leaves from bud. Trees were planted the latter part of February and there they stand on well tilled decomposed granite soil, with a dry, withery look. Trees were grown at Hemet. At time of planting I cut back to about 18 to 24 inches, according to size. As I remember, the

trees had fairly good roots and healthy looking tops and were of fair size. Other trees, such as peaches, planted beside the almonds and at the same time, are growing beautifully. I would like to know why the almonds have failed to grow. Would it do any good to cut back at this time to say 12 or 15 inches? Ground is in fine condition. They have not been irrigated, excepting a couple of trees that water was carried to.—Subscriber.

There is evidently something the matter with the roots of your almond trees. You will no doubt find that they have failed to throw out rootlets. Trees with a single tap root usually act that way and when the roots are heavy and thick with no fibers. They will sometimes stand all summer and not start. This is why most growers prefer a medium-sized tree. Cutting back will not start the roots. The best thing for you to do is to start again next season and plant June buds. They will outgrow the trees you now have even if they do start growing.—J. W. M.

Mildew on Beans.

A subscriber recently inquired as to cultivating beans when moisture is on the plants. He had been warned not to do so because of the practice encouraging the spread of mildew. The matter was referred to Mr. G. W. Hendry, who answers:

"Mildew on beans in California is generally due to the fungus scientifically known as *Erysiphe polygoni*. The idea of the subscriber that the disease is apt to occasion greater losses when cultivation is given while the vines are wet is quite correct because the spores of the fungus may be carried from plant to plant by the moisture adhering to horses and implements. The best means of controlling mildew on beans is to spray with flowers of sulphur, preferably early in the morning while the dew is still on the vines. If the sulphur is to be applied during the day it should be put on in liquid form in order that it may adhere to the foliage. In spraying with dry sulphur the flowers of sulphur is preferable to any of the ground forms of sulphur, but when spraying with the liquid spray, where the material is cooked before application, coarser forms of sulphur may be used with good success. This has been an exceptional season because of the late spring rains, and the mildew, especially in the fog zone of the coastal sections, has been unusually prevalent."

Moles and Rabbits

How can I catch moles, and what is the best poison for rabbits?—Subscriber, Upland.

The best method of controlling moles is to use the ordinary mole trap. This is a double trap, the trigger of which is arranged to come over the runway of the mole, which has been pressed down with the foot. The jaws of the trap are pressed into the ground on both sides of the portion of the runway which is closed. When the mole comes through the runway he springs the trap, and no matter which way he is coming from the trap gets him. The type of trap with spears forced down into the ground is not so effective. Perhaps the best poison for rabbits is strychnine placed under the skin of fresh fruit, or a solution of arsenate of lead, three pounds to 50 gallons of water, may be made and wisps of fresh alfalfa dipped into it and left about the rabbits' runway. These wisps should not be left where they will be accessible to stock.

Lime-Gypsum

Kindly advise if gypsum will take the place of air-slaked lime for changing mechanical condition of soil? Have some land that bakes badly and is always lumpy. Air-slaked lime seems to correct the trouble but as gypsum is cheaper would prefer to use it if it will accomplish the same result.—Subscriber, National City.

Gypsum does not have the power of flocculating or "lightening" the soil as does lime. Gypsum is excellent for holding moisture, making available the potash in the soil, and there would be no harm in its use. In addition to application of lime would suggest the liberal application of coarse, strawy manure or even weeds or wild grass, well worked into the soil.

Potato Seed

Will Early Rose potatoes from this spring's crop answer for seed for the fall planting?—Subscriber, Newhall.

Yes, ripen as well as possible, spread in the light where they may be greened for a few days and they will usually start all right. See Mr. Guilford's article in this issue.

Weaning Kid

Having request for information as to best age to wean kid we have asked Mr. Winthrop Howland of Redlands to give information along this line. He writes: "For best results a doe kid should not be fully weaned until about five months of age. During the first month a kid should be nursed five times daily, as frequent nursings with but little at a time are best for very young kids. After a kid is two months old three times daily is sufficient. When they are three months old they may be fed alfalfa and a very little grain, about a tablespoon daily at first, gradually increased. By gradually increasing the amount of alfalfa and grain until the kid is five months old she should be in fine condition and fully weaned. If a kid is stunted through lack of feeding she can never be made to attain normal size, no matter how well fed and cared for. The first few months are the critical ones for making growth in a doe, and frequent and moderate feeding is the proper rule."

Shothole Borer

A subscriber has brought to the office a small portion of bark from an apple tree which is filled with numberless small holes a little larger than a pin. Some of the trees in the orchard are dying. All seem to be affected. The matter was referred to Prof. E. O. Essig, in charge of the university insectary, and he reports that this work is done by a beetle, "one of the ambrosia beetles commonly called the lesser shothole borer, *Xyleborus xylographus*." Referring to *Injurious and Beneficial Insects of California*, on page 314 we find a description of this pest with its life history and the nature of its work. Its food plants include many of our fruit trees. Regarding the control of this pest Mr. Essig in his book recommends:

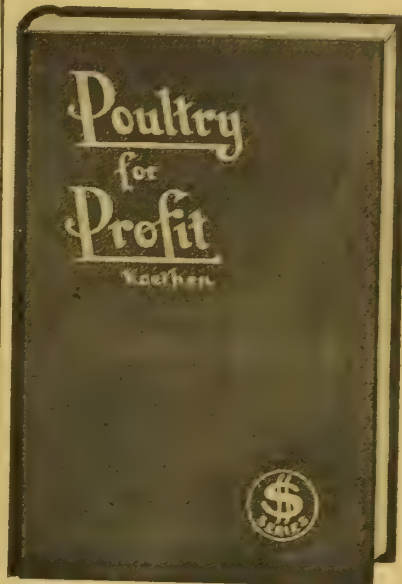
"Keeping the trees as healthy as possible and inspecting nursery stock to prevent introduction are the most important considerations with regard to this beetle. If infestation does occur, all trees which are badly attacked should be removed and burned and the others carefully pruned to remove all the infested parts possible. The application of a coat of carbolated whitewash (one pint of 25 per cent crude carbolic acid to ten gallons of whitewash) is recommended. Prof. E. D. Sanderson also recommends the use of a thick soap wash containing a pint of crude carbolic acid to every ten gallons, and quotes Prof. Gossard as having attained good results by applying early in spring, midsummer and October a whitewash to which is added a small amount of table salt or Portland cement to make it stick. Prof. Gossard is also given as the authority for having obtained good results in killing the larvae within their burrows by the application of a spray made by dissolving three pounds of naphtha soap in three gallons of hot water and adding one gallon of carbolineum. This is thoroughly agitated while still hot and diluted one to four of water for use."

Water Glass for Eggs

A friend tells me that in using water glass for preserving eggs she boils and cools the water, then simply pours the water glass on top of it. Mrs. Koethen's book, as quoted in the *Cultivator*, refers to boiling the water, then cooling and thoroughly mixing. Which is correct?—Subscriber, Porterville.

The water glass must be mixed with the water somehow for if it does not reach the pores of every egg and seal them up there will be decay. Just how the mixing is done, however, is a matter of no consequence. Very likely, since water glass is heavier than water, it will settle through it if it is merely poured on top and will thus mix itself.—J. A. K.

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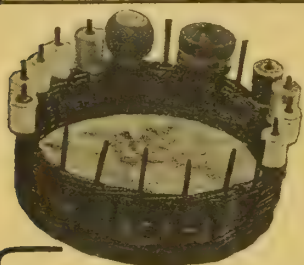
HOT WEATHER DAINTIES

A Delicious Ice Cream Easily Prepared

This is the time of year when cooling foods and drinks take precedence over all others. The making of a good ice cream should be one of the accomplishments of every efficient housekeeper. A recipe in much favor in all parts of the country calls for: One cup sugar, $\frac{1}{2}$ teaspoon salt, one tablespoon cornstarch, one pint milk, yolks of three eggs, one pint cream. Mix the cornstarch with the sugar and add to the slightly beaten eggs. Pour on the milk slowly, add the salt and cook over water until thoroughly done. When cold, add the cream and freeze, flavoring to taste.

In order to insure the best results with the above recipe it is important that a good quality of cornstarch be used, as an inferior cornstarch will mar the entire dish.

Housekeepers everywhere who have the best success with cornstarch recipes always depend upon the famous Kingsford's brand, which can be obtained at all modern grocers. To guard against disappointment, use Kingsford's wherever cornstarch is required. Ordinary cornstarch cannot be depended upon for the results you desire. In ordering Kingsford's, ask your grocer for the little Kingsford's Cook Book which contains the above and many other valuable recipes and culinary hints.



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3 pkgs. Washing Powder or 3 cans Cleanser.....	15c
1 2-lb. square best Butter or 1 No. 5 pall Pure Lard.....	65c
1 lb. Prunes or 1 pkg. Liza Pancake Flour.....	15c
1 bottle Vanilla or Lemon.....	10c

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SODA IN BAKING

First Prize Article

By M. Louise Berneike, Santa Ana.



THE difficulty in using soda with sour milk or buttermilk arises from the fact that the amount of acid in these substances is a variable quantity, varying with the length of time the acid fermentation has continued. But if fresh buttermilk is used or sour milk, which has just reached the consistency of custard, i. e., before the whey has separated or but shortly after that process has begun, a very definite rule may be used as follows: Crush the soda to a fine powder. Of this powder take one level teaspoon to one pint (two teacups) of sour milk or buttermilk. Always sift the soda several times with the flour and use the milk as the wetting. By this method the soda and sour milk or buttermilk may be successfully substituted for baking powder in any recipes for baking.

If you need but half a teaspoon of soda (as for one cup of milk) be sure to fill your teaspoon full, strike it level with the straight edge of a knife, and with the knife divide off one-half from the handle to the tip of the spoon, thus making an even division.

Many of the old recipes direct mixing the soda with the sour milk, but this is an unreasonable and unscientific procedure. Much of the gas (carbon dioxide), upon which the lightness of the product depends is thus lost. If the soda is mixed with the flour the carbon dioxide is formed gradually during the addition of the milk and the gas bubbles are caught and held by the dough.

If milk or buttermilk stands too long before using the extra acid developed will require more soda, and to gauge the amount correctly is almost impossible. If too little soda is used to completely neutralize the acid the product is soggy. If more than enough soda to neutralize the acid is used the product has the disagreeable soapy odor and taste and the yellow color so well known.

It would seem unnecessary for a housekeeper in Southern California to use much baking powder. One level teaspoon of soda will neutralize the acid of one good lemon. The writer

has made biscuit, using soda in the flour and the juice of a lemon (free from pulp) as part of the pint of wetting. Everyone supposed them to have been made with baking powder until told otherwise.

A few especially good recipes are as follows:

Queen Griddle Cakes

One pint of good rich buttermilk (or one pint of sour milk and two tablespoons sweet cream), one pint of flour, one large apple chopped or sliced very fine, one egg, one teaspoon salt, one teaspoon soda. Sift soda, salt and flour well together. Put the egg into the milk without beating. Add the flour and apple and beat well together. Bake on a hot griddle.

Note—If the flour used makes too thick a batter thin with a little sweet milk or water.

Little Gem Tea Cakes

One cup sugar, one cup thick milk or buttermilk, one egg, piece of butter the size of an egg, one-half teaspoon soda, one-half teaspoon salt, one cup seedless raisins, two and one-half cups flour. Sift well together soda, salt and flour and stir in the raisins. Rub butter and sugar together, add the egg and beat well. Pour in the milk and part of the flour mixture; beat together. Add the remainder of the flour and beat thoroughly. Drop by spoon into hot buttered gem pans. Sift granulated sugar thickly over the tops and bake in quick oven about 20 minutes.

Note—Do not forget to sift on the sugar. The product is not at all the same for flavor or lightness without it.

Blackberry Short Cake

Two tablespoons butter, one cup sugar, one egg, the juice and grated rind of one lemon (good-sized and juicy), one teacup sweet milk (i. e., one-half pint), two teacups flour, one level teaspoon soda. Sift flour, salt and soda well together. Cream together sugar and butter; add the egg and beat well.

Put the lemon juice and grated rind into a teacup and fill up with sweet milk or water. Add to the previous mixture. Add the prepared flour and mix well. Bake in three layers.

Take a platter large enough to hold juice. On this place the layers upside down, covering each thickly with blackberries mashed with a plentiful supply of sugar. Pour on all juice.

The lemon combination in this case is very delicious.

Griddle Cakes

These are light as a feather. Make batter over night of one pint of water or milk, one teaspoon salt, one yeast cake dissolved in warm water and flour enough to make light batter. In morning add one and one-half cups sour milk or buttermilk, two eggs well-beaten, one tablespoon melted butter, one level teaspoon soda and flour to make consistency of pancake batter. Let stand 10 or 15 minutes and bake. —Mrs. H. B. Kindscher, Oxnard.

Soda Biscuit

For each quart of flour use one level teaspoon of soda. Sift thoroughly through the flour, or the soda may show in yellow streaks through the biscuit. Use one level teaspoon of salt and two of shortening. Mix with buttermilk or part buttermilk and part thick sour cream, not much stiffer than in making baking powder biscuit.

If you use the sour cream omit the shortening. Bake in a hot oven. —Mrs. J. F. D. Lindsay.

Biscuit

One quart flour, one teaspoon salt, three teaspoons lard rubbed well into the flour, one teaspoon soda dissolved in one pint sour milk. Roll out well and cut with biscuit cutter and bake 15 to 20 minutes in quick oven. —J. C. Goodrich, Alpaugh.

Bran Biscuits

Two cups bran, one cup whole wheat flour, one and one-half cups sour milk, one-half cup olive oil, three tablespoons molasses, one teaspoon soda, one teaspoon salt. Bake in muffin tins. —Mrs. H. W. Hall, Ponoma.

Milo-Maize Johnnie Cake

One pint milo meal, one-half pint wheat flour, one egg, two tablespoons sugar, two tablespoons molasses, one teaspoon salt, one teaspoon soda, one cup sour milk. Bake in a sheet and cut in squares.

This is a new recipe I originated a few days ago. —Laura F. Kimball, National City.

Brown Bread

One cup corn meal, one cup graham (or rye) flour, one cup wheat flour, one cup sour milk, two-thirds cup dark honey, slightly warmed; one-fourth cup sugar, two mixing spoons cream, one-half teaspoon salt, one teaspoon soda dissolved in the honey. Mix well and fill a well-buttered mold two-thirds full and steam three hours. —Mrs. H. F. Mellen, Acton.

Graham Bread

Two cups buttermilk, one cup sweet milk, one scant teaspoon soda, one scant teaspoon baking powder, one-half teaspoon salt, three cups Graham flour and two cups white flour. One-half cup of raisins makes a nice addition. Bake one hour. —Mrs. Alice E. Myers, Angiola.

Nut Bread

One and three-fourths cups Graham flour, three-fourths cup white flour, one small teaspoon salt, one-half cup brown sugar, one and one-half cups (large) sour milk, one-half teaspoon soda and a little baking powder. Stir all dry ingredients together and put in one large cup walnuts broken in small pieces before adding milk. Bake covered about one hour. —Mrs. N. C. Johnson, Chatsworth.

Graham Bread

One cup sour buttermilk, one-third cup molasses, one teaspoon salt, one teaspoon soda, two and three-fourths cups Graham flour, one tablespoon melted butter. Beat all together thoroughly. Steam two hours. —Mrs. N. L. Dryden, Hollister.

Brown Bread

Two cups corn meal, one cup whole wheat flour, two cups fresh buttermilk, two-thirds cup New Orleans molasses, one level teaspoon soda. Pinch of salt. Grease mold and steam three hours. Then take out of water and bake in mold 20 minutes. —W. D. W., Arroyo Grande.

Oatmeal Bread

Two cups sour milk or buttermilk, two cups Graham flour, one and one-half cups white flour, one and one-half cups oatmeal, one tablespoon melted shortening (any kind), one tablespoon brown sugar, one teaspoon each baking soda and salt. Bake for 45 minutes in a loaf in a moderate oven. —Mrs. J. William Randall, San Dimas.

Cheese Cakes—(English Recipe)

Heat a quart of sour milk very slowly until the curd separates from the whey; cut the thick milk into squares and it will cook in the whey more evenly; drain carefully through a cloth or colander. Beat the curd fine with a fork or put it through a sieve; add two beaten eggs, one-half cup sugar, the juice of a lemon, some grated nutmeg and a pinch of salt. Bake slowly in patty pans lined with puff paste. —Mrs. O. P. Towne, Downey.

Soft Ginger Bread

One cup brown sugar, one cup New Orleans molasses, one cup shortening, one cup sour milk, three cups flour, one teaspoon each of salt and soda, two teaspoons of ginger, three eggs. Cream sugar and shortening, add molasses; dissolve salt and soda in sour milk and add to the mixture; beat eggs and stir in; sift flour and ginger into the mixture and beat thoroughly. Turn into a well-greased pan, into which flour has been dusted and bake in a moderate oven 45 minutes. —Mrs. J. W. Lander, Exeter.

Hurry-Ups

One cup rolled oats, one cup flour,

one large tablespoon shortening, one large tablespoon sugar, one teaspoon salt, one-half teaspoon soda, one-half cup buttermilk or sour milk.—A. K. Swain, El Centro.

Tutti-Frutti Cake

One and one-half cups brown sugar, one heaping tablespoon shortening, one egg and yolk of another, one cup sour milk with two teaspoons soda, two cups flour, two teaspoons each of cinnamon and nutmeg.

Filling

One cup sugar and four tablespoons water. Boil until it will spin a thread. Have the white of one egg beaten stiff and beat the syrup into egg gradually. When thick add one cup chopped raisins. Excellent.—Mrs. H. A. Brimmer, San Bernardino.

Ginger Bread

One and one-half cups flour and one teaspoon each of soda and ginger sifted together; one-third cup shortening, one-half cup each sour milk (preferably buttermilk) and grape syrup.

This is a good original recipe, and is very inexpensive. The grape syrup is made simply by boiling the juice of ripe grapes, and nothing else, till it ropes slightly. Any one who has access to a vineyard can get all the culls or second crop grapes she wants for little or nothing. They make as good syrup as any.—Delia E. Burd, Lodi.

Preserving Time Again at Hand

Part Corn Syrup Being Used In Place of All Sugar

Every woman who does her own preserving will be interested to know that most excellent results are being obtained by the use of part corn syrup and part sugar, in place of all sugar, in the making of all kinds of preserves, jams and jellies. The corn syrup being less sweet, more of the natural flavor of the fruit is retained, and it is only necessary to use sufficient sugar to make the product suit the taste of the individual. This is particularly true in canning pears, peaches, raspberries and many other of the more delicately flavored fruits.

In order to demonstrate this properly, it is essential that the best quality of corn syrup be used. Most excellent results are being obtained with the brand of syrup known as Karo (Crystal White), which can be obtained at all modern grocers. This is the ideal preserving syrup; and if you have not tried it before, be sure and do so this season.

In ordering ask your grocer for a copy of the little Karo Cook Book, which contains much valuable information on the subject of preserving, as well as on culinary subjects generally. For preserving purposes always specify Karo (Crystal White)—to distinguish it from the Karo table syrup.

Why Suffer Longer From Ants?

When Their Extermination Is A Comparatively Simple Matter?

If you should ask the average housekeeper to name the principal annoyances with which she has to contend, ants would invariably be given a prominent place in the list.

This will not hold true for any great length of time, however, for women everywhere are rapidly learning of the great discovery made by a baker and candy-maker in Los Angeles, whose place was over-run with ants, but who originated a paste which rid his shop entirely of them in one day. So rapidly did the news of the discovery spread that it was necessary to build a large factory to supply the demand.

This remedy is put up for general use under the name of Kellogg's Ant Paste and can be obtained at all good druggists. Women everywhere are using it with surprising results. Try a package today.

Buttermilk Nut Cake

Two cups granulated sugar, half cup butter or other shortening, two cups fresh buttermilk, one large teaspoon soda in milk, one cup chopped raisins, one cup chopped or ground English walnuts, three level cups flour, one teaspoon nutmeg, one teaspoon cinnamon; bake slowly.

The batter wants to be a little thicker than when you use eggs.

This is one of my best cake recipes.—Mrs. G. W. Mullendore, Perris.

Brownstone Front Cake

Three-fourths cup chocolate, one-half cup sweet milk, two-thirds cup sugar, yolks of three eggs. Put on the stove in a double boiler and cook to a custard, adding the eggs last as they thicken it. Take one-half cup butter, one cup sugar, one cup sour milk, two cups flour, whites of three eggs, one teaspoon soda dissolved in the sour milk, one teaspoon baking powder. Let the custard cool and add to mixture last. Beat all together and bake in four layers. Flavor with vanilla. Filling—One cup of sugar, one-half cup thin cream and two tablespoons syrup. Let boil till it forms a soft ball in cold water. Cool, then beat till creamy and spread on cake and you have a cake fit for the queen.—Mrs. C. W. McEwen, Modesto.

Chocolate Cake

One large cup sugar, one cup sour milk, one-third cup shortening (softened), one egg and yolk of another (or one large or two small eggs), one level teaspoon soda, salt (unless you use butter for shortening), two cups of flour, and two teaspoons cocoa or grated chocolate. Put all ingredients except one-half cup of the flour into mixing bowl and beat well. Then add the one-half cup flour with perhaps one-half teaspoon of baking powder. Bake in layers and put together with white frosting.—M. D. Jennings, Redlands.

Prince Albert Cake

Two-thirds cup butter, two cups sugar, three eggs, one cup sweet milk, three cups flour, one teaspoon cream tartar, one-half teaspoon soda; bake two-thirds of this in two pans and to remainder add one tablespoon molasses, one-half cup currants, one tablespoon cinnamon, cloves and nutmeg. Put together with plain icing.—Mrs. John Scruby, Whittier.

Peter Pans

Half cup brown sugar, one egg well beaten, half cup molasses, two-thirds cup sour milk, teaspoon vanilla, teaspoon powdered cinnamon, two cups pastry flour, into which one teaspoon of soda has been carefully sifted, half cup each of finely chopped nut meats and raisins, one-fourth cup butter, one-fourth cup lard. Cream the lard, butter and sugar; then in order named add other ingredients, beating thoroughly. Drop on buttered tins and bake in a hot oven.

Sour Cream Frosting—Cup thick, sour cream, one and one-half cups granulated sugar, pinch of soda; boil about eight minutes; remove from fire, add cup finely chopped nut meats, stirring until cool.

In all the above recipes level measures are used; if the milk is quite sour use one-third more soda. Where lard and butter are called for Crisco or Cottole may be advantageously substituted, giving equally as good results, and reducing the cost materially.—Mrs. C. B. Kirkpatrick, Los Angeles.

Oatmeal Cookies

One and one-half cups rolled oats, one and one-half cups flour, one cup sugar, three-fourths cup cut raisins, one-fourth cup walnut meats, four tablespoons melted butter or lard, four tablespoons sour milk, two eggs, one-half teaspoon soda, one-half teaspoon cinnamon. Mix dry ingredients and fruit; add beaten eggs and milk with soda dissolved in it. Mix well; add melted butter and drop in teaspoon on baking sheet.—Annie M. Beals, Corvallis, Oregon.

Oatmeal Cookies

Three cups flour, one cup shortening; mix as for pastry. Add one and one-half cups granulated sugar, one and one-half cups oatmeal, nutmeg and cinnamon to taste, one cup raisins, one cup chopped walnuts,

one teaspoon salt, one teaspoon soda, one cup of thin sour milk. Mix well and bake in slow oven.—Mrs. H. S. Ackleson, La Canada.

Cookies

Three eggs, three cups sugar one cup lard or one-half cup lard and one-half cup butter, one cup buttermilk, one teaspoon soda, one teaspoon vanilla, pinch of salt, flour to make soft dough. Cream sugar and lard and add beaten eggs. Dissolve soda in milk and add flavoring and stir in flour. This makes a good plain cookie, and is fine with a cup of raisins added or any kind of nut; especially fine with peanuts or black walnuts.—Mrs. L. W. Miller, Salinas.

Soft Jumbles

One and one-half cups sugar, one cup sour cream, two-thirds cup butter, three eggs, three cups flour, one teaspoon soda, one teaspoon vanilla. Bake in gem pans.

Frosting—Two cups powdered sugar, one-half cup chocolate, one-half cup sweet cream. Just boil up and beat till cool. Add vanilla and

spread.—Mrs. W. S. Brown, Winton.

Old Fashioned Cookies

Two eggs, two cups sugar, one-half cup lard, one-half cup sour milk, one-half cup thick sour cream, one teaspoon soda, one teaspoon baking powder. Mix not too stiff if liked soft; roll rather thick, cut and sprinkle with sugar before baking.

The cup used is a half-pint measuring cup, not a teacup, nor a coffee cup.—Mrs. M. F. Beardsley, Campbell.

Doughnuts

Three eggs and one and one-half cups sugar. Beat thoroughly until light; add one-half cup sour cream and beat again. Then add one cup good buttermilk, one teaspoon salt, one teaspoon vanilla, one-half teaspoon nutmeg, one teaspoon soda dissolved in the buttermilk; flour to make right consistency to roll. Cut with doughnut cutter and fry.—Mrs. R. H. Leeson, Ontario.

Doughnuts

Two eggs, one and one-half cups (Continued on Page 23.)



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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, June 30, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:

Creamery Extras	26
Firsts	25
Country	22@23
Ladle	20@21

CHEESE

Prices to trade, 1 to 2 cents higher:

California Fresh	13½
Cheddar	20@21
Domestic Swiss	20
Eastern Daisy	19
Oregon Triplets	16@17
Longhorn	19@19½
Imported Swiss	30@32
Tillamook	16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts	23
Candled	25
Petaluma-Santa Rosa	30
Northern Case Counts	24
Other Outside Stock	21½

Prices to producers:

Hens, lb.	11@15
Roosters, old	9
Broilers, lb.	15
Fryers	17
Roasters, lb.	17
Turkeys	14@16
Ducks	13
Geese	11
Squabs, doz.	2.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.00
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	5.00
Lambs, head	4.75@5.00

POTATOES

Wholesale selling price:

Idaho Russet	2.40
Idaho Rurals	1.60
New, cwt.	1.20@1.30
Sweets, Red, lb.	5
Sweets, Mex., lb.	6
Northern Burbanks	1.60

ONIONS

Wholesale selling price:

Bermudas, Imperial Valley, crate	80
Garlic	11@12
Crystal Wax, crate	1.00
Garlic	11@12

VEGETABLES

Wholesale selling price:

Asparagus, green, lb.	10
Artichokes, Northern, doz.	30
Beets, doz.	30
Beans—	
Wax	4@4½
Limas	7@8
Green	4½@5
Cabbage, sack	80
Carrots, doz.	30
Cauliflower, doz.	1.50
Celery, doz.	60@85
Chicory	40
Chives, doz.	1.25
Corn, lug	45@50
Cucumbers, box	50
Egg Plant, lb.	6@7
Escarole, doz.	40
Horseradish, lb.	15
Leeks, doz.	40
Lettuce, doz.	25
Mint, doz.	40
Okra, lb.	12½
Onions, Green, bunch	20
Oyster Plant, doz.	40
Parsnips, doz.	40
Parsley, doz.	15
Peas, Telephone	4@5
Peppers—	
Chili Green	20
Bells	15
Radishes, doz.	15
Rhubarb—	
Crimson Winter, box	75
Strawberry	1.00@1.10
Spinach, doz.	15
Squash—	
Crookneck, box	45
Summer, lug	30@35
Tomatoes, crate	90
Turnips	30

FRESH FRUIT

Wholesale selling price:

Apples—	
New Spring Crop, lug	1.25
White Astrachan, box	2.00
Red Astrachan, box	1.25
Apricots, lug	55@65
Avocados, doz.	4.50
Bananas	4¼@4½
Berries—	
Strawberries, basket	3@6
Blackberries, basket	2½@3
Raspberries	3@4
Loganberries, tray	50
Cantaloupes—	
Diamond Pack	1.35@1.40
Standard	1.40@1.60
Jumbos	1.65@1.75
Cherries—	
Royal Ann, lb.	9@10

Black, lb.	11@12½
Cherimoyas, lb.	20@25
Currents, crate	1.30@1.35
Figs—	
Black, lb.	6
White, box	60@1.15
Grapes, lb.	7½@8
Peaches—	
Clings, lug	1.25
Freestones, lug	1.25
Plums—	
Climax, lug	1.25
Sonomas, lug	1.35
Formosa, lug	1.50
Satsuma, lug	1.50
Burbank, lug	1.25
Pineapples, lb.	6@7
Watermelons, lb.	1¼@2½

CITRUS FRUIT

Wholesale selling price:

Lemons	1.50@2.35
Grapefruit, Seedless	2.25@2.75
Limes, basket	1.00
Valencias	2.00@2.50

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, lb.	8@8½
Boxes	10@16
Apricots	12½
Nectarines	5@5½
Peaches	8½@13½
Prunes	7½@13

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	16½
Budded Walnuts	20
Jumbos	19
No. 2	12
Culls	9
Peanuts—	
California, Raw	6
Japan	5½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White	15@16
White	14@15
Light Amber	12½
Extr. Water White	7@7½
White	6@6½
Light Amber	5
Beeswax	24@25

RICE

Wholesale selling price:

California	4.25@4.75
Broken	2.75@4.25

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:	
Limas	5.35
Bayous	6.00@7.00
Lady Washington	5.75
Pinks	4.65
Black Eyes	6.75@7.00
Lentils	14.00
Small White	5.50@5.75
Garbanzos	8.50

HAY

Prices to producer f. o. b. Los Angeles: Following prices are on new hay.

Barley Hay	8.00@9.00
Wheat Hay	8.00@11.00
Tame Oat	9.00@12.00
Alfalfa	8.00@11.00
Volunteer	5.00@7.00
Straw	5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.15
Corn, White	2.25
Wheat	2.00@2.05
Oats, White	1.90
Oats, Hulled	2.25
Egyptian Corn	2.20
Barley Seed	1.35
Barley, Hulled	1.70
Milo	1.85
Sunflower Seed	7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy	1.90
Alfalfa Meal	1.15
Alfalfa Molasses, per cwt.	1.20
Beef Scraps	3.00@3.10
Beet Pulp	1.20
Cracked Corn, cwt.	2.20

Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.80
Bone Meal	2.05
Meat Meal	3.10
Bone, Green	1.75
Charcoal	2.00
Oil Cake Meal	2.60
Fish Meal	3.25
Rollod Oats	1.95
Middlings	2.20
Rollod Barley	1.30
Feed Meal	2.25
Scratch Feed	2.20@2.40
Oyster Shell	1.25

San Francisco Market

SAN FRANCISCO, June 29, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras	25
Firsts	25½

CHEESE

Wholesaler to retailer.

Oregon Y. Am.	14½
Young America	12½
California Flats	8@11
Cheddar	20
Oregon Twins	13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras	24
Firsts	21
Select Pullets	20

Price to producer:

Hens, lb.	13@16
Fryers	22@24
Broilers	18@20
Roosters—	
Young	25@26
Old	9@10
Squabs	1.75@2.25
Ducks	12@16
Geese	2.50@3.00
Belgian Hares, lb.	6@7

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@6½
Cows and Heifers	3@5½
Calves, lb., live weight	6@9
Hogs	4¼@7¼
Wethers	5½@6½
Ewes	6@6½
Milk Lambs, lb.	8@8½
Shorn stock ¼ @ 1c less	

POTATOES

Wholesale selling price:

Idaho	1.50@1.75
Idaho Russet	1.50@1.75
Burbanks	1.25@1.50
Oregon	2.00@2.25
New Delta	85@1.25
New Potatoes	85@1.15

ONIONS

Wholesale selling price:

Onions, cwt.	40@75
Bermudas	65@75
Australian Browns	1.50@1.75
White, crate	75@1.00
Oregon	90@1.00
Garlic, new	5@7

VEGETABLES

Wholesale selling price:

Asparagus, box	1.35@1.50
Canner's Price	1.00
Beans—	
String	2@3½
Wax	1½@3
Celery, crate	50@1.25
Corn, Brentwood, sack	1.75@2.25
Winters, sack	75@1.25
Fresno	75@1.00
Cucumbers—	
Southern, lug	50@60
Northern, lug	30@50
Eggplant, lb.	4@7
Lettuce, crate	75@1.00
Okra, crate	75@1.25
Peas, sack	1.00@2.00
Peppers—	
Bell, lb.	10@12½

WEATHER CONDITIONS

For Week Ending June 26, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

	Rainfall Data			Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Eureka	.00	42.40	46.01	64	52
Red Bluff	.00	84.79	25.01	94	58
Sacramento	.00	17.21	20.09	86	50
San Francisco	.00	27.41	22.27	68	50
San Jose	.00	22.71	16.79	80	44
Fresno	.00	10.92	9.68	92	50
Independence	.00	3.80	9.53	92	..
San Luis Obispo	.00	28.17	20.51	78	46
Los Angeles	.00	17.04	15.64	78	56
San Diego	.00	14.41	10.01	72	60

Chili, Mexican	10@12½
Rhubarb—	
Alameda	40@60
Squash, Summer, lug	30@50
Tomatoes—	
Imperial Valley, crate	50@75
Merced	40@50

FRESH FRUIT

Wholesale selling price:

Apples—	
Merced	35@50
Red Astrachan	1.00@1.35
Gravenstein	1.50@1.75
Other varieties	40@75
Apricots, crate	40@50
Canner's price, ton	15.00@16.00
Bananas, Hawaiian, bunch	1.25@1.50
Blackberries, chest	3.50@6.00
Cantaloupes—	
Ponies	75@1.25
Standard, crate	1.25@2.00
Cherries—	
Blacks, lb.	4@8
Royal Ann	5@7
Ordinary	2@4
Currents, chest	2.50@5.00
Figs, box, single layer	35@50
Gooseberries, lb.	6@7
Loganberries, chest	2.00@3.00
Loquats, crate	75@1.25
Peaches, crate	55@80
Pears, Bartlett, box	90@1.00
Pineapples, doz.	1.50@2.00
Plums—	
Clyman	60@75
Climax	60@75
Satsuma	90@1.00
Raspberries, chest	5.00@7.00
Strawberries, chest	3.50@5.50
Watermelons, lb.	½@1½

CITRUS FRUIT

Wholesale selling price:

Grapefruit, Seedless, new crop	1.75@2.75
Lemons	1.50@3.50
Lemonettes	1.00@1.75
Limes, Mexican, case	4.00@5.00
Tangerines, halves	75@1.75
Valencias	2.25@3.25

DRIED FRUITS

Wholesale Prices are:

Prunes—Bulk basis, 1914 crop almost cleaned up; 30-40s, 5½c; all other sizes, 5c; 1915 crop, Santa Claras, 30-40s, 4½c; 40-50s, 3½c; all other sizes, 3¼c. Outside sections ¼c lower.	
Other Fruits—	
50-lb. boxes—	
Evaporated apples	5¼c 5½c 6¼c
Apricots	6c 7¼c 7½c 9c
Peaches	3c 3¼c 3½c 4½c
Pears	7c 8c 8½c 10c

RAISINS

RAISINS—The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7c; 12-oz., 6c; 50-lb. cs., 6½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Local stocks of all nuts practically cleaned up.

Peanuts—	
Unpolished	3½@4½
Polished	4@5½
Shelled, China	5½@6
Italian Chestnuts	6½@7

BEANS

Wholesale selling price:

Limas	4.65@4.75
Pink	4.00@4.10
Black Eyes	6.00@6.25
Cranberry	4.80@4.90
Small White	4.65@4.80
Garbanzos	6.50@6.75
Large White	4.60@4.80
Bayou	4.65@4.75
Manchurian Speckled Bayous	3.60@3.80
Manchurian Butters	4.50@4.75
Red Mexican	5.40@5.50

ment of new crop has become more active as there have been received a number of shipments of second cutting new hay of nice type and apparently in good condition. A cargo of second cutting from the river district has attracted notice on account of its excellent quality, being better than anything we have seen for a long time. Prices of the new crop appear to be based on the going prices of the old crop. Fancy Wheat Hay (lt. bales.)

We quote the average wholesale selling price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt. bales)	13.00@14.00
No. 1 Wheat or Wheat and Oat	10.50@11.50
No. 2 Wheat or Wheat and Oat	8.00@9.00
Choice Tame Oat	11.00@11.50
Other Tame Oat	7.50@10.00
Barley	5.00@8.00
Wild Oat	6.00@8.00
Alfalfa	6.00@9.00
Stock Hay	4.50@5.00
Wheat, Cal. Club	1.65@1.67½

GRAIN

Alfalfa Seed	16½
Wheat, Cal. Club	1.70@1.72½
Corn, Eastern Yellow	1.77
Barley Feed	1.02½@1.07½
Barley, Old Crop Feed	1.02½@1.05
Oats, Red, Feed	1.25@1.35
Oats, White, Feed	1.40@1.45
Millet	2½@2½
Flaxseed	5@5½
Rye	2.00@2.25
Sunflower	5@5½

FEED STUFF

Wholesale prices.	
Alfalfa Meal, car lots	13.50@14.50
Bran, ton	26.50@29.50
Feed Cornmeal	40.00@41.00
Cracked Corn	40.00@41.00
Rollod Barley, ton	23.00@24.00
Rollod Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	30.00@31.00
Oatmeal Meal	38.00@39.50
Cocoonut Oatmeal	24.00@25.00

Citrus Fruit Market

LOS ANGELES, June 30, 1915.

A very satisfactory condition prevails in practically all orange markets. It is thought there may be a slight easing up after the fourth of July trade, but at the same time there is promise of a very satisfactory condition throughout the season.

Lemons are still showing great weakness. The market is filled with fruit held back. Many sales have been made around the dollar mark, which means that freight simply has been received for the fruit. The weather is cold and rainy and there is absolutely no demand for lemons. Shipments at this end are being held up and this will continue until the market is cleared of some of the fruit now stored.

Shipments.

Shipments of citrus fruits from Southern California points since November 1, 1914: Oranges 23,772, lemons 4774, total 33,546; to same date last year, oranges 30,960, lemons 2185, total 33,145. Tulare County: Oranges 5648, lemons 198, total 5846; to same date last year, oranges 5854, lemons 39, total 5893. Northern California: Oranges 630, lemons 2, total 632; last year same date, oranges 404, lemons 5.

NEW YORK, June 28.—Twenty-eight cars Valencia, two navel, one St. Michaels, three mixed cars, and six cars lemons sold. Market unchanged on oranges, weak and lower on lemons.

VALENCIAS—	Avg.
Regal, Growers Ft. Co.	\$3.20
Regent, Growers Ft. Co.	3.15
Big Four, Growers Ft. Co.	3.75
Old Mission, ft., Chapman	4.55
Old Mission, ft., Chapman	4.10
Regal, Growers Ft. Co.	3.75
Olive Heights, Growers Ft. Co.	3.40
Regent, Growers Ft. Co.	3.55
Big Four, Growers Ft. Co.	3.30
Alphabetical, Or. Ex.	4.00
Ticktock, Or. Ex.	3.75
Anaheim Supreme, S. T. Ex.	4.65
Mother Colony, S. T. Ex.	4.05
Duquesne, A. C. G. Ex.	4.25
Fert Pitt, A. C. G. Ex.	3.70
Old Mill, A. C. G. Ex.	3.60
Gold Buckle, R. H. Ex.	4.10
Belt, R. H. Ex.	3.60
Atlas, Or. Ex.	4.05
GRAPEFRUIT—	Avg.
Squirrel	\$2.40
Prairie Chicken	2.00
LEMONS—	Avg.
Quaker Girl	\$2.00
Greenleaf	1.60
Pet	2.35
Greyhound	1.60
Linnet	2.05
Swallow	1.70
Squirrel	1.60
Mt. Wilson	1.90
Mt. Lowe	1.30
Questa	1.10

BOSTON, June 28.—Nineteen cars sold. Market doing better on both Valencias and lemons.

VALENCIAS—	Avg.
Green Banner, Suth. Ft. Co.	\$4.00
Elephant, Eleph. Orchards	3.95
Native, Southerland Ft. Co.	3.85
Grey Elephant, Eleph. Orchards	3.80
Olivia	3.75
Caledonia, Placencia, M. O. A.	3.35
Albion, Placencia, M. O. A.	3.45
Ranchito, S. T. Ex.	3.90
Wm. Tell, Or. Ex.	4.20
Golden Beaver, Or. Ex.	4.00
LEMONS—	Avg.
Homer, Q. C. Ex.	\$2.70
Camel	1.70
Mt. Wilson, A. C. G. Ex.	1.25
Golden Bowl, V. C. Ex.	2.50
Silver Cord	1.85
Reliable, S. T. Ex.	2.25
Pet, S. D. Ex.	2.40
Greyhound, S. D. Ex.	1.90

CINCINNATI, June 28.—Six cars sold.

Market strong on both Valencias and lemons.

VALENCIAS—	Avg.
Royal	\$3.70
Valley	3.65
Echo, S. T. Ex.	3.90
Arroyo, S. T. Ex.	3.70
LEMONS—	Avg.
Circus, Sparr Ft. Co.	\$2.00
Del Oro	1.95
Fillmore, F. C. Ex.	1.45
Blue Band	1.15
Cluster, O. K. Ex.	2.10
Lake	1.55
Centuria, V. C. Ex.	2.30
Lemon Spray	2.25

CLEVELAND, June 28.—Six cars sold. Market is unchanged.

VALENCIAS—	Avg.
Poppy, Red, Hgts. Orch.	\$3.70
Lake Hemet, S. B. Ex.	3.70
Soboba, S. B. Ex.	3.45
King, S. A. Ex.	3.40
Gold Band, R. H. Ex.	3.40
LEMONS—	Avg.
Green Crown, A. C. G. Ex.	\$1.25
Hiddendale, E. C. U.	1.90
Del Diabolo	1.50
Stock Label	1.35
GRAPEFRUIT—	Avg.
Echo	\$3.10

ST. LOUIS, June 28.—Ten cars sold. Market weak on lemons, steady on Valencias.

VALENCIAS—	Avg.
Gavilan, Riv. Ex.	\$3.40
Rooster, Or. Ex.	3.05
Searchlight, Or. Ex.	2.85
S. S. Brand, Or. Ex.	2.90
Alhambra, S. T. Ex.	3.95
Don Quixote, S. T. Ex.	3.00
LEMONS—	Avg.
California, Q. C. Ex.	\$1.20
Corona, Q. C. Ex.	1.95
Corona Queen	1.55
Arab, S. D. Ex.	1.70
Pup	1.50
As-you-like-it, L. G. F. G. A.	1.85
Growers	1.60

PHILADELPHIA, June 28.—Ten cars sold. Market higher on small sizes Valencias.

VALENCIAS—	Avg.
Cycle, F. C. Ex.	\$3.65
Justrite, Q. C. Ex.	3.85
Duquesne, A. C. G. Ex.	4.05
Fort Pitt, A. C. G. Ex.	3.55
Old Mill, A. C. G. Ex.	3.50
Ticktock, Or. Ex.	3.85
LEMONS—	Avg.
Quail, O. K. Ex.	\$1.75
Coyote	1.35
Linwood, Q. C. Ex.	1.25
Lemonia	1.00
Alamo, F. C. Ex.	1.20
Justrite, Q. C. Ex.	1.20
Greenleaf, S. T. Ex.	1.50

ST. MICHAELS—

Golden Orange \$3.65
Palm Tree 3.55

PITTSBURGH, June 28.—Eleven cars sold. Market steady on oranges and lemons.

VALENCIAS—	Avg.
Fuchsia, S. A. Ex.	\$3.40
Black Crusader, A. C. G. Ex.	3.80
Green Crusader, A. C. G. Ex.	3.60
Iris, D. M. Ex.	4.15
Violet, D. M. Ex.	3.80
Quality, S. T. Ex.	3.90
Campfire, S. T. Ex.	3.65
Cut and Try, S. T. Ex.	3.65
Pioneer, L. M.	3.60

As-you-like-it, L. G. F. G. A. \$1.80

REY, S. T. Ex.	1.15
Tunnel	1.00
Canyon, A. C. G. Ex.	1.75
Mt. Wilson	1.90
Mt. Lowe	1.55
Questa, Q. C. Ex.	1.90
Arab, S. D. Ex.	2.05
Pup	1.75
NAVELS—	
Blue U	\$2.40

"Three years ago," says President F. A. Seiberling of The Goodyear Tire & Rubber Co., "bankers were wondering where the people of the United States would get the money to pay for the 150,000 automobiles then manufactured. There are now 1,500,000 machines in use, and next year the number will pass the 2,000,000 mark. This great expansion of the automobile business will require millions of additional tires."

One of our neighbors lost a horse Thursday from overheating. To work horses to the limit while the temperature is above 90 degrees, and not a breath of air is stirring, is neither profitable nor humane. As a rule the horse is not given the consideration that he deserves. Drivers are too often actuated by selfish motives in their treatment of these faithful friends of ours upon which depends the prosperity of the owners.—Ex.

POSSIBLY SO.

"You say there are lots of skunks out in the country where you live?"
"Yep, a right smart."
"Mercy! I don't see how you could stand them!"
"It may be, son—excuse me for movin' to windward of ye—that it's because they don't smoke cigarettes."

Tulare County has invited the California Fruit Growers to meet at Tulare in December.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Mortgaged Property Sold

A loans money to B, taking his note secured by mortgage on real estate. B sells property to C subject to mortgage. To whom does A look for his interest, to B whose note he holds or to C? If C fails to pay interest when due can he still hold B?—Subscriber, Hemet.

C, taking the property subject to the mortgage and not assuming the same, is not liable for a deficiency judgment on the same, and the only recourse of A for his interest is upon B, or if the interest is not paid to foreclose the mortgage.

Wife's Property

Husband's son by first wife deeded property to husband's second wife, mortgaged without interest, not paid for. Is same absolutely hers on husband's death (no will)? Can she sell or rent same without the son's consent? If she dies before it is paid for, whose is it, and has she any right to will it to anyone? No children by second wife.—Subscriber.

The property being a gift to the wife, became her separate estate and she has an absolute right to devise it to whomsoever she may desire.

Presumption of Gift

A widow with one son, on remarriage put her money all into the home property, in the husband's name. Should the wife die what part of the estate would go to the son? No children other than this son, no children by second marriage. How would the property be divided between the stepfather and son?—Subscriber.

Having placed her separate property in her husband's name a presumption of an absolute gift to the husband will arise. The wife is entitled to will her separate estate to whomsoever she may desire, and she could therefore will this property, if it was her separate estate. For precaution it would be well to have a written agreement between the parties concerned as to the real owner of this property. As, if the presumption of gift would prevail, the husband might take the whole property; whereas, if this did not prevail, it being the separate property of the wife, she could do whatsoever she desired.

GETTING EVEN WITH DAD

"This war will go on and on," said Mrs. Harry Payne Whitney, who has given a \$250,000 field hospital to the belligerents.

"This war will go on and on," she repeated sadly, "and the side that is getting the worst of it will display the spirit of little Willie."

"Little Willie's father, as he laid on the slipper, said:

"Willie, this hurts me more, far more, than it does you."

"Then keep it up," said little Willie, grinding his teeth. "Keep it up, dad. I can stand it."—Washington Star.

VISITOR AND VICTIM

"Madam," said the man in the street car, "I know I ought to get up and give you my seat, but, unfortunately, I've recently joined the Sit Still Club."

"That's all right, sir," replied the woman. "And you must excuse me for staring at you so hard; I am a member of the Stand and Stare Club."

She proved herself so active and conscientious a member that the man began to feel uncomfortable under her gaze. Finally he rose and said: "Take my seat, madam; I guess I'll resign from my club and join yours."—Boston Transcript.

SODA IN BAKING

(Continued from Page 21)

sugar, one cup sour milk, one and one-half teaspoons soda, one small teaspoon cream tartar, very small piece butter, little nutmeg and salt. Mix soft dough and fry—Mrs. C. A. Hilton, Modesto.

Doughnuts

Beat one egg and add to it one cup of sugar, a pinch of salt, nutmeg to taste, and one and one-half cups of sour milk in which one teaspoon of soda has been dissolved. Then add two teaspoons of melted lard or butter. If sour cream is used omit shortening. Stir in enough flour to make soft dough, about four cups. Roll out one-half inch thick; cut and fry in deep fat.—Mrs. D. H. Tarbet, Onarga, Illinois.

Tomato Soup

I don't believe it is generally known that just as good tomato soup can be made from sour milk as sweet, providing it has not clabbered. Use one quart tomatoes, two sliced onions, small, one level teaspoon soda. Cook together until it quits foaming, then add one quart milk (sour or sweet). Thicken with flour worked into butter and when thickened strain through a sieve, salt and pepper to taste and serve.—Mrs. R. V. Langford, National City.

Sour Cream Salad Dressing

A salad dressing which makes a welcome change is made of thick sour cream whipped stiff and seasoned with vinegar, sugar and paprika, with a little celery seed added if desired. For a cup of cream use a tablespoon of vinegar.—Mrs. Cora Irwin, Lancaster.

PRIZE WINNERS

Mrs. Berneike's splendid article, "Soda in Baking," receives first prize; Mrs. C. B. Kirkpatrick's, second.

JULY PRIZE CONTEST

For outdoor lunches. A subscriber has asked for suggestions for picnic lunches, campfire parties, etc., for the vacation good times.

For best list of good things for outing lunch with one recipe the Cultivator will give \$2.00; for second best, \$1.00. All published will receive three months' subscription to the California Cultivator. If a member of your family is now subscribing send the name that subscription may be extended.

Those who have received one extension of subscription this year are not entitled to another. All may however compete for cash prizes.

Write Early

Write early. All letters should be in this office by the morning of July 15. Recipes will appear in issue of July 22.

Please write on one side of paper only. Address letters to California Cultivator, Los Angeles. Send only one suggestion, the one you yourself think the very best. So much splendid material was contributed for the June contest that we could not use for lack of space that our feelings were dreadfully hurt; we wanted to use it all and we wanted you all to see it all. Therefore we will ask you to do the selecting yourselves of the one best.

Send Suggestions

Any suggestions for future contests will be gladly received. The Cultivator wishes to give what its readers most need or are most interested in. The present issue's presentation of use of soda in baking was the result of a request from a subscriber, as is the subject of the July contest. Send in a subject for August.

WOULD GET A CHANCE

Dolly—At last I have met my ideal! Kind-hearted, modest, patient, self-denying. But, alas, he is married.

Daisy—Don't worry; no woman will live long with such a freak. You'll get a chance yet.

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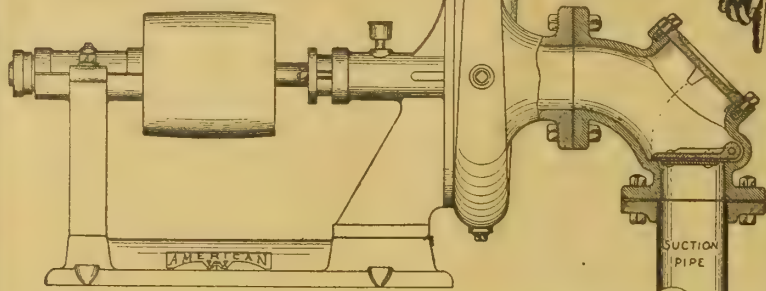
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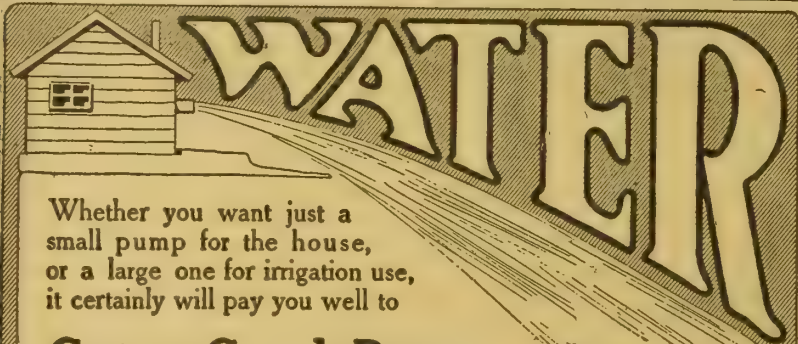
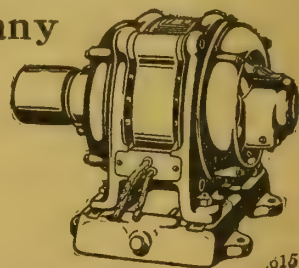
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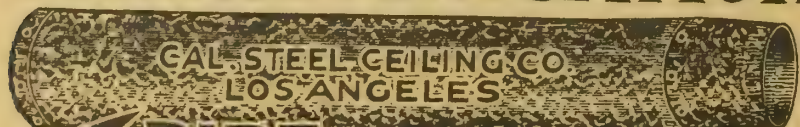
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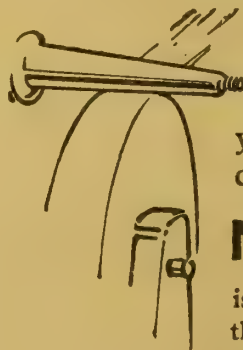


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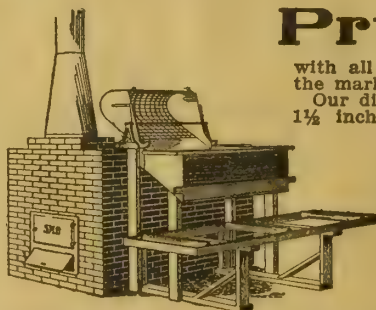


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Large power dipper and grader, capacity 75 tons per day:

24-in. Hand or Power Dry Graders:

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4 grade 60.00

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LOS ANGELES

July 8, 1915

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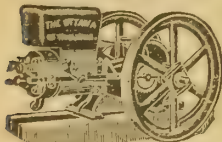
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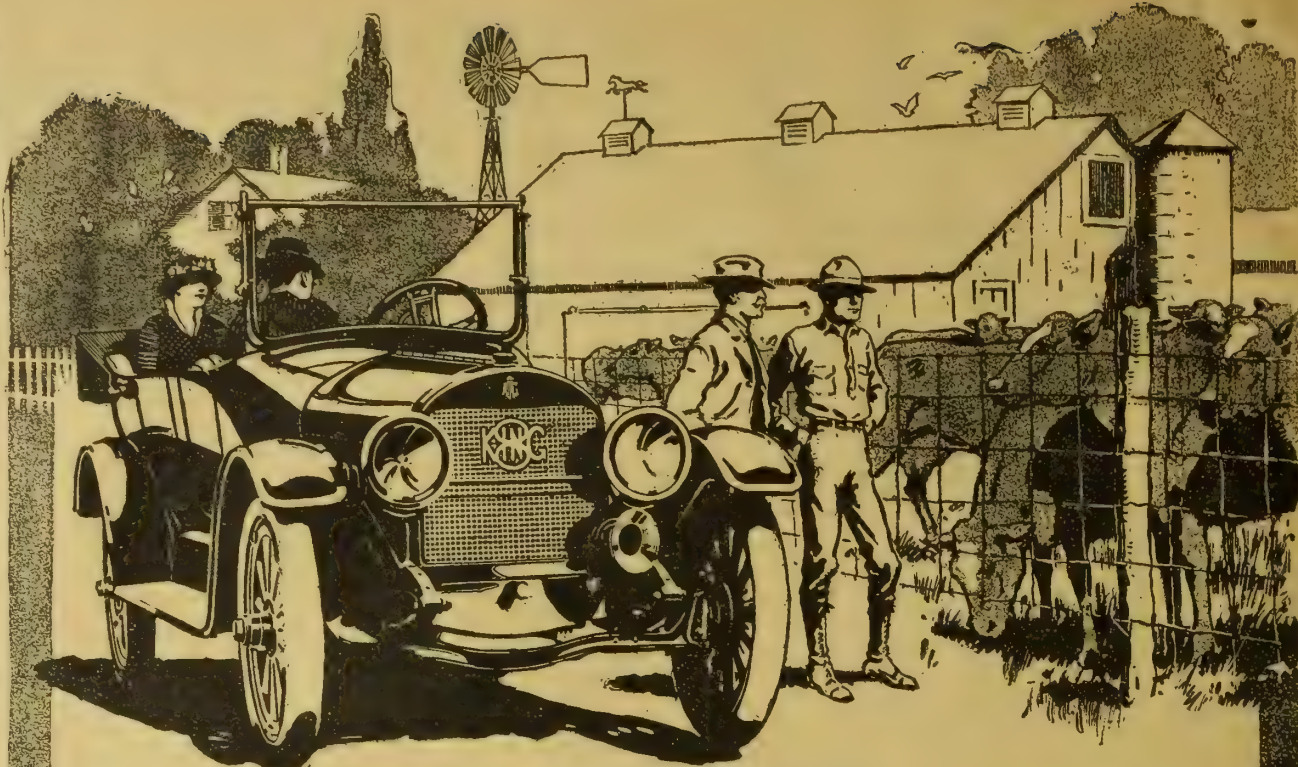


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The reasons for Eight-Cylinder superiority are easily understood. A Four-Cylinder engine has two power im-

pulses per revolution; a Six-Cylinder, *three*; while the "Eight" has *four*. This almost "turbine" flow of power means, in the King Eight, traveling from a creeping mile and a fraction to a racing 50 without gear-changing, and the ability to gather speed up to 30 miles an hour in 20 seconds. Such flexibility naturally reduces vibration to nearly nil, which in turn results in silence and longevity and adds to riding comfort.

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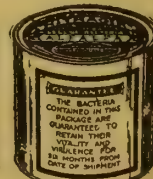


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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 2

LOS ANGELES: THURSDAY, JULY 8, 1915

One Dollar Yearly

U. of C. Summer Travel Course in Citriculture

With Introduction by Dr. J. Eliot Coit. Most Valuable Feature of Citricultural Work. Letters from Each Member of the Class as to This Year's Lessons



EACH summer during vacation the division of citriculture of the college of agriculture conducts a summer travelling course for the benefit of students who intend to specialize in citriculture. The object of this is to widen the students' horizon and make sure that each graduate has some practical knowledge of the great citrus industry of California as a whole as well as information gained from lectures, laboratory and library work. The course lasts six weeks, and each student pays his own expenses which average about \$125. Students unable to take the course may fulfill the requirements by working for wages 12 weeks on some acceptable citrus ranch and keeping the necessary notes on their work and the ranch itself. Students are required to take this work at the end of the sophomore year and before they begin class-room work on citrus fruits.

This year the travelling course began with a few days at the San Francisco exposition and proceeded to Sacramento, thence north through the East side of the Sacramento Valley to Tehama, thence south through the West side to Davis. From Davis a jump was made to Fresno and from there southward the citrus ranches around the following towns were visited: Exeter, Lemon Cove, Porterville, San Bernardino, Highlands, Redlands, Fontana, Riverside, Corona, Orange, Chula Vista and San Diego. Two days were spent at the San Diego exposition and the class moved back to Los Angeles, where some time was spent in neighboring districts such as Whittier and Pasadena. At the offices of the Fruit Growers' Exchange a series of lectures was arranged by Mr. Powell and others of the exchange force. Covina, San Dimas, Pomona and San Fernando were also visited and then the class moved to Santa Paula, where the boys put in a few strenuous and exceedingly profitable days at the Rancho Sespe and the Limoneira. At Santa Paula the class disbanded after turning in the bulky notebooks for correction and grading.

This year the boys have been more impressed with the difficulties than with the advantages of citriculture. This has been due partly to the attitude of conservatism following the low average prices received for citrus fruit this year, and partly to the growers' desire to discuss their particular perplexities and problems with the professor in charge. Such a course, by the way, is a very good thing for the professor in charge, as it keeps him in close touch with local conditions in all parts of the state and helps him to make his classroom teaching concrete rather than abstract.

The editor of the Cultivator has invited each of the boys to write a short statement of his impressions received during the trip and the articles which follow reflect the feeling of uncertainty referred to above. After two years' classroom study and discussion of the various practices observed the students will have their minds clarified to an extent at least and will feel more confident and sure of themselves.

The writer wishes to take this opportunity, in behalf of the college and the class, to extend thanks and assurances of keenest appreciation to the many growers and others who have given so generously of their time and hospitality in order that this group of young men may be better educated and more broad-minded Californians.

IMPRESSIONS AFTER A SURVEY OF THE CITRUS INDUSTRY

By H. R. Kelley

Two things stand out above a host of impressions received during a brief survey of California's citrus industry. The most important one in my mind is that growing citrus fruits still presents a large number of unsolved problems. Successful growers follow practices which may be almost opposite to those of their neighbors who get equally fine results. Another grower with similar conditions of soil and climate may imitate one of these successful men and yet have very poor results.

No one appears to be able to account for this or give any definite information as to what is right or wrong in citrus culture. All styles of pruning are in effect and examples may be found where each is successful and others where they are failures. Men who should know if any one should, after having spent years in studying the matter, frankly admit that they have arrived at no definite results.

In view of this fact, it seems to me that a young man starting out in the citrus game is making an investment somewhat blindly, as he has few clear-cut precedents to follow and little assurance that his planting will ever be profitable.

This brings me to the other impression, which is strongest with me, that citriculture to be properly carried on requires a great deal of capital. A poor man has no surplus to carry him over a freeze or a period of poor prices. Neither can he invest money in experiments to determine as near as possible the best procedure for his particular soil and climatic conditions.

The man of means can do these things, as he can stand the loss if his experiments prove to be failures or if unforeseen happenings temporarily cut off or delay the income from his grove. I draw this conclusion after observing a good many orchards, for in so many cases the best were large holdings belonging to wealthy men or companies who have the capital to carry them over low markets such as are in effect at the present time, and at the same time do not have to neglect their groves, but can keep them in the best condition so that they may be more profitable in the good times which are sure to come.

* * *

SCIENTIFIC EXPERIMENTATION

By H. E. Kowalsky

The thing that impressed me most after the trip is that the citrus industry at the present time is still in the experimental stage of development. As new sections of the country are being planted out to citrus trees there arise new conditions that force the grower to try out new ideas and practices. In the older citrus sections of the state the soils are becoming depleted and the growers are confronted with the problem of keeping their trees in condition to continue producing maximum crops.

This explains the necessity for experimenting on the part of the growers and a great many experiments of merit and value are being conducted. The practice of experimenting, however, is in itself a rather complicated study and it can hardly be expected that those who have not made a special study in this branch of work will accomplish marked results.

What seemed to me to be a mistake is the use of a large acreage to try

out a single plan. I base my assertion on the practice of the experiment stations. If the chief of an experiment station had the idea that sodium nitrate was a desirable method of nitrogen application and proceeded to treat his entire experiment station with sodium nitrate, the growers would object. They would demand a more careful and varied method of investigation. However, it is a well known fact that a large number of men are using their entire acreage of citrus to try out a single idea, and sufficient checks are seldom left.

Some growers believe in commercial fertilizer, others in cover crops, stable manure, clean culture or mulch. Some men use lime in wholesale quantities and others believe in pruning away a third of their trees. Those operations may be advisable under certain conditions, but under other conditions they may be detrimental. However, growers cannot be certain that their trees need lime, heavy pruning, etc., unless these things are tried. They realize that something must be done for their trees and follow the idea that appeals to them as most advisable.

Failing in clear-cut results the grower often proceeds to put his entire grove under a different treatment without considering what effect this will have on the treatment given the previous year, and so in a dozen years a dozen different treatments are applied. At the end of this time the trees may have been improved or injured, but in either case such a variety of things has happened to them that it is impossible to say what was the cause of the improvement or injury. Perhaps it was the treatment at the end of the twelfth year, most likely it was a combination of all the operations throughout the 12 years. Thus, although the grower has obtained results instead of an understanding as to how these were obtained, he must continue experimenting to try and maintain the production of his orchard.

In trying to arrive at a solution of this problem one idea presents itself to me. Could it be possible to establish experiment clubs throughout the state? That is, have eight or ten men who are really working out ideas on their own ranches club together and secure a scientifically trained man, such as a farm adviser, to come into their groves and check up their experiments for them. Such a man could keep detailed records of the trees, conditions of climate, soil and yields in much the same way as is done at an experiment station. Using a half-acre to one experiment, the grower could try out a number of ideas scientifically conducted. At the end of four or five years he might better know what treatment his particular conditions call for.

If the growers could obtain in this way definite information about their special problems, it seems to me that the citrus business would be taken out of the speculative class and take its place as a stable agricultural industry.

* * *

CITRICULTURE NOT AN EXACT SCIENCE

By Hans Lemcke

The wonderful variation of the conditions under which citrus fruits are grown throughout California and the apparent uncertainty on the part of many growers as to what their results are to be has impressed me most during the trip. There seems to be a striking lack of cocksureness among

the growers. When questioned as to their reasons for doing things a certain way they usually reply that they do not know. In fact, there seem to be so few well formulated rules to go by that the young man just getting acquainted with the business tends to be confused.

Definite and accurate knowledge in regard to many phases of the business may be in existence in books, bulletins, or the brains of a few men, but if this is true there is a wonderful opportunity for dissemination of such knowledge. I think the average grower with whom we talked has not yet mastered all the information which has been made available by the scientists. The farm advisers, as retailers of knowledge, may do a great work here.

A very few of the largest and best known growers are doing a great deal by clubbing together and pooling the ideas gained by any one of them, but this does not reach to the masses and is hardly available to the average grower except as it may in future be driven home by public demonstrations arranged by farm advisers in a very large number of orchards scattered through the citrus growing districts.

* * *

SOILS FOR CITRUS GROWING

By Donald Campbell

Judging from our trip, if I were asked, "What type of a soil does a citrus tree need?" I would say, "Any type."

As we have traveled over the state and viewed citrus trees from all angles, under all conditions, I can say frankly that I have seen the citrus tree growing luxuriantly on every type of soil, from a coarse open gravel soil to a clay which had to be blasted.

Let this be true, there is yet another thing to consider. The groves that are the most uniformly healthy and productive throughout are nearly always the ones which are growing on ground that has a high humus content.

This great factor in soil life, humus, cannot be safely overlooked by any one. It is as essential for proper tree feeding as fruit and vegetables are to man's diet.

The best example I saw of this practice showing returns was at Hamilton. The Mills Orchard company started in with their land when it was so hard you could not get a plow into it. By repeated applications of alfalfa, straw, cornstalks or anything they had, they have brought that soil into a rich, aerated, flocculent state. Now it can be worked with ease and will grow anything.

They regard agriculture as a banking business. The soil is the capital, the net profits the surplus. If the surplus is spent no gain the following year will be realized over the first, whereas if the surplus is added to the capital the next year will yield larger profits. Following this out, each year they put back into the soil in the way of organic fertilizer profits they have made on their crops. As a result they are building up a rich soil, their capital.

Such a soil will eventually be able to support a large tree in its production of tremendous crops, and not only this, the fruit will be of best quality. I am convinced, moreover, that it is the best policy to start right. It is far easier and cheaper to build a big soil capital before the trees are planted and while they are small than to attempt revolutionary measures of soil treatment

(Continued on Page 33)



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These five things are fundamental and he who ignores any one of the five invites failure.

Good fruiting trees are good revenue producers, and if you have the requisite water, location and soil—true citrus land—you cannot afford to miss the opportunity to

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We were founded twenty-five years ago, and have been improving the grade ever since. Buy TEAGUE QUALITY TREES, embodying vigor and symmetry of root, body and top—and in the selection of buds, which will not only be true-to-name in the general acceptance of the term, but true to the best type of the varieties to which they belong as well.

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San Dimas Citrus Nurseries, Inc.

Citrus Trees Exclusively

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Deciduous

Fruits

STATE FRUIT GROWERS' CONVENTION

THE 45th State Fruit Growers' Convention will convene in Palo Alto Tuesday evening, July 27. On that evening David Starr Jordan, chancellor of Stanford university, will extend welcome. Response will be made by State Horticultural Commissioner Cook. Features to be touched upon will be the outlook as to various fruits. The outlook for the pomelo will be discussed by R. S. Vaile, assistant professor of orchard management, citrus experiment station, Riverside; the walnut, J. B. Neff, a practical grower; the prune, E. N. Richmond, grower and packer; the apple, J. B. Hickman, horticultural commissioner, Monterey County; the apricot, F. B. McKeivitt, a grower and member of California Fruit Distributors; the peach, F. B. Roullard, horticultural commissioner Fresno County; the cherry, speaker to be announced; the grape, Frank T. Swett, horticultural commissioner, Contra Costa County.

On Wednesday morning at 9 o'clock (it is to be noted Dr. Cook still believes in getting into action early) the session will be held in the college chapel of the university. Committees will be appointed and addresses made as follows: Pear Culture, R. H. Parsons, a pear grower of Seattle; Control of Pear Blight, E. A. Gammon, pear orchardist; Blight Resistant Roots, A. L. Wisker, president Grass Valley Farmers' club; The Outlook for Pears in California, Percy Gammon, orchardist.

At the same time Wednesday morning a session for women will be held in room 460 of the physiology building of the university, at which Miss Lillian D. Clark of the university extension work will preside. At this session the following addresses will be given: Bee Culture—Honey Making, Mrs. H. C. Acklin, bee expert; Growing Nursery Stock as a Business for Women, Mrs. L. E. Sexton, horticulturist; An Apple Ranch and Its Development, Miss Vida French, apple grower.

On Wednesday afternoon at 1:30 in the college chapel: The Codling Moth, A. L. Melander, professor of entomology, State Agricultural college, Pullman, Washington; Blight, Resistance of Pears and Pear Stocks, F. C. Reimer, superintendent Southern Oregon experiment station; Sub-tropical Fruits Which Give Promise in California, D. L. Crawford, professor of botany, Pomona college; The Grower as an Experimenter, E. S. Thacher, semi-tropical fruit specialist.

At the Wednesday afternoon session for women Mrs. Myrtle Shepard Francis, president of the Theodosia B. Shepard company, will give an address on Women as Florists; Mrs. Emily Hoppin, orchardist, will discuss Farming for Women.

At the evening session in the chapel, beginning at 7:30, addresses will be made on Plant Quarantine Service, C. Gordon Hewitt, Dominion entomologist, Ottawa, Canada; Experiment Station Movement in America, S. B. Doten, director Nevada agricultural experiment station; The Lure of the Garden, Mrs. Myrtle Shepard Francis.

On Thursday, July 29, at 9 a. m., President G. W. Pierce of the Almond Growers' association will discuss The Almond Outlook; Miss C. A. Whelan, orchardist, Why I Planted an Almond Orchard; C. S. Vaile, citrus grower, Cover Crops in Citrus Culture; J. G. Lipman, director New Jersey agricultural experiment station, The Interrelation of Soils and Crops.

Thursday afternoon will be devoted to an automobile trip through the famous Santa Clara Valley, in charge of the Palo Alto chamber of commerce.

At 730 p. m., in the college chapel, Birds and Mammals Injurious and Beneficial to the Farmers' Interests, with lantern slides, will be the subject of an address by H. C. Bryant, game expert connected with the state fish and game commission; The Olive, W. F. Oglesby, assistant in viticulture,

Berkeley; The Olive Outlook, B. L. Meek, olive grower.

Friday at 9 a. m., in the college chapel, addresses will be made on The Outlook for the Orange, J. H. Reed, citrus grower; The Outlook for the Lemon, G. W. Hosford, manager San Dimas Lemon association; The Outlook for the position of California Oranges, E. Chace, chemist in charge citrus products, laboratory U. S. D. A.; Operation in Fruit Marketing, H. G. Johnson, sales manager California Farmers' Union; Careful Handling of Fruit, C. S. Milliken, Semi-Tropical Fruit Exchange.

Friday, 1:30 p. m., in the chapel: Uses and Misuses of Infectious Diseases and Insect Enemies for the Control of Insect Pests, A. W. Morrill, state entomologist, Arizona; How a Farm Woman Found Herself, Mrs. Emily Hoppin, orchardist; Proportion Between Hunger and Food Supply, G. J. Pierce, professor of botany, Stanford university; Eelworm Parasites on Plants, Peter Frandsen, professor of biology, University of Nevada.

Friday at 1:30 p. m., in the physiology building, will be held the session for women, with an address by Mrs. Sara Roberts, Canning and Selling Fruits and Vegetables; Canning Poultry and Meats, Mrs. Belle S. Corey; Scientific Jelly Making, Mrs. Hilda B. Nielsen.

At 7:30 p. m., in the chapel, W. H. Olin, agricultural commissioner of the Denver & Rio Grande railroad, will deliver a talk, What Can the Railroad Do to Further the Potato Industry; H. J. Webber, citrus experiment station, Citrus Culture; W. P. Kelley, agricultural chemist of the citrus experiment station, Maintenance of Soil Fertility.

On Saturday morning the convention will adjourn in a body to meet on the exposition grounds, San Francisco, this in honor of horticulturists' day at the exposition. Delegates will make inspection of the exhibits on the grounds and in the various buildings during the day, and in the evening will gather in the recital hall in the eastern part of Festival Hall on the exposition grounds and listen to addresses by Prof. John M. Coulter of the University of Chicago and Director J. G. Lipman of the New Jersey Agricultural experiment station. Prof. Coulter's address will be Mutual Indebtedness of Science and Agriculture, while Dr. Lipman's address will be Present and Future Supplies of Commercial Plant Foods.

* * *

To have placed the events in the natural order we should perhaps have noted that the first session of this great week at Stanford university will begin on Monday, July 26, at 1:30 p. m. This is not the State Fruit Growers' Convention proper, but will be a meeting of the West Coast Potato Association. The first session will be held in the physiology building. The tuber moth will be discussed by Prof. E. O. Essig; Associations and Their Effect Upon the Potato Industry, by R. W. Faulkner of Idaho; A New Thrips Enemy of the Potato, by Prof. D. L. Crawford, Pomona college.

On Tuesday morning, July 27, at 9 a. m., The Value of Potatoes as Food, Miss Lillian D. Clark; Seed Potatoes, W. V. Shear, assistant horticulturist, U. S. D. A.; Varieties of Potatoes, Mrs. Hilda B. Nielsen, a practical potato grower.

Tuesday at 1:30 p. m.: The Need of Experimental Work with Potatoes, E. H. Phreaner, a practical potato grower; Fertilizing Potatoes, W. Q. Fitch, potato specialist, University of Indiana; Fundamentals in Potato Growing, E. H. Grubb, potato specialist. The same evening at 5 p. m. there will be a general discussion of interstate quarantine for the prevention of the spread of potato diseases. Dr. Cook makes an appeal to all interested to be present and take part. It is vital to arrange a plan of marketing California potatoes with as little injury to the industry as possible. Another special meeting will be held on Wednesday afternoon at the same hour to con-

tinue the discussion as to these quarantine orders. * * *

Another gathering which will attract and which is to be held to a certain extent at least during the entire week, will be that of the various County Horticultural Commissioners of California. This organization begins its sessions Monday, July 26, at 9 a. m. in the zoology building of the university, with Deputy State Horticultural Commissioner George P. Weldon in charge. The Relationship of the County Horticultural Commissioner to the County Farm Adviser will be discussed by State Commissioner Cook. Weed Dissemination, by O. W. Newman, and Sulphur Fungicides by George P. Gray, chemist, insecticide laboratory, University of California, will be other features of this first session.

On Monday afternoon in the same building Harry S. Smith of the state insectary and O. W. Newman, George P. Weldon, Profs. H. S. Fawcett, H. J. Quale, S. B. Doten, Peter Frandsen and others will discuss laboratory work. The Monday evening session of the horticultural commissioners will be given over to discussion of Some of the Economic Insects of Lesser Importance in California. In this E. O. Essig of the state university will lead. In addition there will be round table discussion of insects and quarantine measures by E. J. Vosler, E. O. Essig, Frederick Maskew, Commissioner Cook, Deputy Commissioner Weldon, Prof. Quayle and others.

The commissioners gather again on Tuesday morning at 9 a. m., when Prof. C. P. Gillette of Colorado agricultural college will discuss Life Habits of Some of Our Common Plant Lice; A. W. Morrill, Arizona state entomologist, The Relation of Climate to the Distribution of Insects; Prof. A. L. Melander of Washington state college, Abuses of Horticultural Inspection.

The Tuesday afternoon session of the commissioners will be held in the zoology building. The various county horticultural commissioners will enter into a round table discussion as to plant diseases. In this Secretary E. J. Vosler of the state commission and Profs. Fawcett, Horne and others will lead.

The program which Commissioner Cook is now sending out contains the information that rooms can be had at the dormitories on the campus of the university for \$1 per day, meals at 50 cents each. To secure room reservation write at once to Mr. G. A. Clark, academic secretary, Stanford University.

As to railroad rates, more definite information will be given in a later Cultivator, but there will be reduced rates offered. Dr. Cook announces that there is some doubt as to whether there will be 50 present with railroad receipts on the usual fare and a third certificate plan, for there are special round-trip rates offered because of the exposition.

This gathering of the three conventions should bring a great number of horticulturists together. The last convention in Los Angeles brought out between 1,300 and 1,500 registered delegates. It was by far the greatest ever. This should be a still more representative gathering, for the problems confronting the fruit grower seem to have increased rather than decreased. We wish there was more opportunity offered on this program for discussion of marketing questions, for that is one of the most important before the growers of today. However, there is a world of good things which will well repay an entire week's visit to Palo Alto.

KEEP SUGAR BEETS FROM LOSING VALUABLE ELEMENT

The sugar beet farmer who is delayed in getting his crop marketed may keep his beets from evaporating to a great extent by leaving them in relatively large piles and by covering the piles with beet tops. A new bulletin of the United States department of agriculture (No. 199) entitled, "Loss in Tonnage of Sugar Beets by Drying," outlines what is probably the best practice in harvesting sugar beets, as follows:

With a suitable beet plow or digger the beets are first torn from their root anchorage and lifted several inches in the soil, which is at the same time loosened. As soon as sev-

eral rows have been dug, laborers pull the beets entirely out of the ground by hand, throwing those from five, seven or nine rows into piles at convenient distances apart in the line of the center row. Another squad of laborers immediately follows and tops the piled beets, throwing the tops to one side of the pile of beets. Finally the wagon comes and the beets are loaded into it and at once hauled to the factory scales. It is thus possible to haul the first load within about an hour after the digging is begun.

Most beet growers, however, are not able to organize the work so well. For one reason or another several days may elapse before the beets reach the scales. After the beets are torn from their root system, transpiration still continues, but the water thus lost is no longer replaced by the roots. Evaporation also takes place from the underground portion of the beets in the now loosened soil. After the beets have been pulled the evaporation is greatly augmented whether or not the beets have been topped. Commonly, the beets after being topped are thrown into open piles of no great bulk, remaining there until loaded into wagons.

The system of harvesting outlined

above makes it practicable for the beets to be gathered in piles which would average one-fourth of a ton or even more. The beet tops can then be easily and rapidly placed over the piles and they will reduce considerably the evaporation from the beets.

When beets are sold at a flat rate the water content is of the highest importance to the farmer since he is entitled to sell by weight the full normal content of water. Deterioration of sucrose does not occur in appreciable quantity during the short periods of storage under consideration.

In selling his beets to the factory the farmer in most cases is allowed to contract either at a flat rate per ton for all beets containing above the stipulated minimum of sucrose or he may accept a sliding scale of payment whereby the price per ton is modified according to the actual average sucrose content of his beets. Some sugar companies offer a so-called sliding scale, which is in reality two separate flat rates, one for all beets up to a certain percentage of sucrose, and a slightly higher rate for all above that percentage.

The following is a fair example of prices under the sliding scale: Five dollars for beets containing 16 per

cent of sucrose and 30 cents a ton for every additional one per cent of sucrose, with a deduction of 25 cents a ton for every one per cent less than 16 until the acceptable minimum is reached.

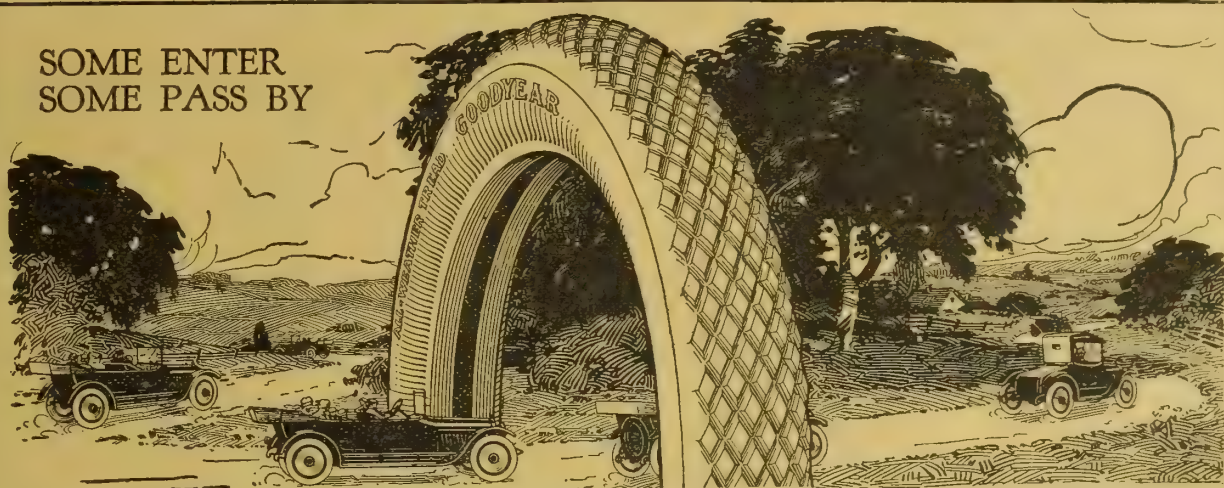
Under this system it will be seen that the increment of sucrose is paid for at practically the same rate per cent as the basal price of \$5 for 16 per cent beets. Fractions of one per cent are paid at the same rate.

An example of the flat rate would be \$5 a ton for all beets testing 14 per cent of sucrose or more.

It is at once evident that any ordinary loss in weight due to a delay of one day or several days between digging and weighing is, under the sliding scale, reasonably well compensated for, and that the loss in that time due to chemical changes is practically negligible, provided the sucrose test is made from beets taken when they are delivered and weighed and not from a sample taken from the field just before or immediately after the crop is dug.

The sliding scale would probably also be fairly equitable in dealing with beets that have been piled under the

(Continued on Page 47)



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And this year—on February 1st—we gave you another big price reduction. It will save Goodyear users about \$5,000,000 this year. It was our third reduction in two years, totaling 45 per cent.

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Yet, despite this reduction, we have added new improvements which will cost us \$500,000 this year. Part are in extra rubber—all in extra wear.

We have added these extras to the best tires built. To tires that dominate because of super-service. And we've done it at a time when price reductions have led to considerable skimping.

Total, \$1,635,000

All the extras we give you in Goodyear tires will cost us \$1,635,000 this

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We could omit all these, yet build a tire which looks about like Goodyears. It would serve as well as many rival tires. Thus we could add to this year's profits \$1,635,000.

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It's a vast mistake to think that tires are pretty near alike. Five of the greatest features known are found in Fortified Tires alone. And many a tire lacks all the extras that we cite.

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We pay the price to give you these extras, and save it by mammoth output. You should insist on them. Any dealer, if you ask him, will supply you Goodyear tires.



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More Money to the Grower



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ON THE DECAY OF ORANGES WHILE IN TRANSIT FROM
CALIFORNIA

G. Harold Powell says:

(Extracts from Bulletin No. 123 of U. S. Dept. of Agriculture,
Bureau of Plant Industry.)



"The work of three years has shown that the orange as it comes from the tree in sound condition seldom develops decay and that brushing, washing, and the mechanical injury of the fruit in handling are followed by more or less loss, the greatest decay developing in the mechanically injured oranges. . . . an apparently sound orange when it comes from the tree shows greater resistance to decay than the same fruit after it has been handled in different ways, that the fruit showing visible mechanical injury as the result of handling develops the maximum decay, and that the brushing and washing of sound oranges is more or less detrimental to their keeping quality The packing house tests indicate that an orange with a sound skin is not more likely to decay when grown in the coast region than a similar orange grown in other parts of the orange belt and that a similar line of handling produces similar results in the different regions. . . . in groves that are well fumigated the fruit is practically free from the sooty-mold fungus. . . . Oranges are washed primarily to remove the sooty-mold fungus that grows in the so-called honeydew exuded by the black scale.

. . . . When the present investigation by the Bureau of Plant Industry was undertaken, from one-third to one-half of the oranges of California were washed, practically all of the fruit in some sections being treated in this way, especially where the growers had been overconfident in the parasite 'Scutellista cyanea' or in the use of oil sprays as means of holding the black scale in check. . . . The necessity for washing the orange should be avoided by a proper fumigation of the groves with cyanide" (this of course means fumigation with hydrocyanic acid generated from cyanide). "Fumigation, on the other hand, is one of the operations that promotes good orchard management; it maintains strong, healthy trees and fruit, and it reduces the cost of preparing the oranges for market in a manner that increases the keeping quality of the fruit."

In Bulletin No. 63, of the U. S. Department of Agriculture, Bureau of Plant Industry, by A. V. Stubenrauch, under the heading INFLUENCE OF CLEANING OPERATIONS UPON DECAY, appears the following:

"Washing is perhaps the severest treatment that can be given to citrus fruits, and wherever it is not absolutely necessary in order to render the fruit marketable it should be omitted."

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(Patents Applied For)

Process for the Generation of

Hydrocyanic Acid Gas

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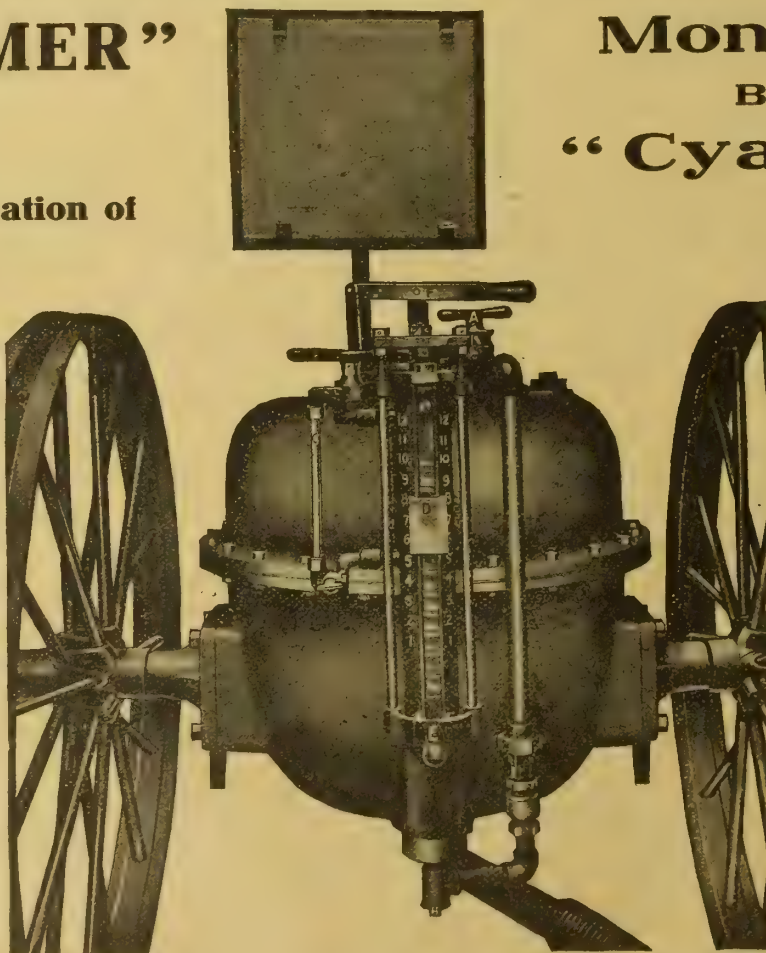
Mechanical Device

for Applying the Process
in Practical Fumigation
Operations

The "CYANOFUMER" (Process and Mechanical Device) while new is fully proven and we are prepared to establish the correctness of every claim which we make in its behalf.

The "CYANOFUMER" generates and delivers Pure Hydrocyanic Acid Gas to the tents and does it with satisfactory uniformity, one charge with another.

THE CITRUS FRUIT GROWER SHOULD INSIST UPON HAVING HIS TREES FUMIGATED WITH HYDROCYANIC ACID GAS, GENERATED IN AND DELIVERED BY THE "CYANOFUMER."



Money Saved

By Using the

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- It eliminates waste.
- It insures accurate Dosage.
- It produces perfect chemical reaction.
- It generates pure Hydrocyanic Acid Gas.
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- It removes risk of gas condensation.
- It stops loss of gas by absorption.
- It solves the problem of normal tent leakage.
- It increases fumigation efficiency.
- It saves time and labor.
- It prevents acid burning of tents.

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EFFICIENT FUMIGATION

LABOR-**SAVING** machinery makes for economy and greater efficiency. Every small boy in the country would not today be carrying a fairly accurate timepiece if hand labor were the principal factor in the manufacture of watches. Machinery seemingly almost human in intelligence has been introduced and various parts of the most delicate appliances are turned out and the human hand is employed only to assemble these parts. We recall well a remark made some years ago in effect that while practically all classes of manufactures and production excepting agriculture

have investigated the resistance of trees, effect of temperature, humidity, electric winds, the texture and holding capacity of various fabrics and methods of fabric treatment. Chemists have investigated best form of chemical from which to secure cyanogen, and today (or tonight rather) the fumigator goes to his work with almost exact knowledge of the tree's requirements.

There are still problems, however, worthy of some of the best minds. One of these is the matter of leakage. How can a fabric be secured which will be light in weight, impervious and durable? A specially woven, light weight duck is generally used, but at



Cyanofumer in Operation

had made wonderful strides the production of our food was conducted much the same as it was on the hills of Judea. But that is not true today for with the advent of gasoline and electricity the farmer is taking advantage of these forces, and the use of labor-saving machinery will increase, we believe, even more rapidly for the next half century than it has for the past. The rule of thumb and general guesswork cannot continue for if the American farmer has to compete with farmers in other parts of the world and still maintain the American farmer's mode of living he must produce more and better.

The writer vividly recalls barefoot days when, with a shallow pan in one hand in the bottom of which was a little coal oil, and a short paddle in the other, he was sent to the potato patch to "gather bugs." This was during the time when the Colorado potato beetle was failing to observe the neutral rights of the "old-fashioned potato bug." It has been his lot to fight insects from that time up to the present, and with practically every method known to the farmer. The methods employed, starting with the afore-said potato beetle, have followed all the way through the various spraying processes and the hopperdozer, down to fumigation.

Fumigation, however, in those early days, more than a score of years ago, was only just beginning to be known. First lessons were taken from Prof. D. W. Coquillett, at that time connected with the department of agriculture and making special investigations in California. Then the rule of thumb method prevailed entirely. We did our best to estimate the cubic contents of a tree. Most of us did our estimating on the general common sense and experience basis rather than an actual figuring out in feet and then having an accurate dosage scale. After a night's work in the orchard the trees were observed closely the next day and those which were burned with a five-ounce dose had their pictures fixed in the eye so far as possible, and the next night that particular size of tree received perhaps a four-ounce dose. Since then scientific people

times this permits sufficient leakage to make the difference between success and failure, this in part because of the length of time required to secure the entire release of the gas from the cyanide of sodium. The method followed has been to place the sulphuric acid and water in a vessel underneath the tent, dropping into this ounce-sized pieces of cyanide. The total time required for the complete change of these substances and the release of the gas has been from five to 15 minutes. Instead of requiring 15 minutes, if greater concentration can be secured by the release of all this gas at once, the leakage would not have so disastrous effect.

The instantaneous production of gas is now accomplished in a mechanical appliance which not only has the advantage of securing full power of gas instantaneously but has the efficiency of the perfect machine. In a word, the appliance consists of a container holding sulphuric acid and water mixed, and another chamber in which is a solution of cyanide and water. An automatic measuring device is so arranged that with a simple movement of the hand the operator is enabled to inject the proper amount of the cyanide solution into the sulphuric acid solution. But may we be permitted to quote from a more technical description:

"In the practice of this process perfect chemical reaction is obtained; there is no decomposition of the hydrocyanic acid and no loss by absorption; thus nearly the full theoretical cyanogen content of the cyanide is converted into hydrocyanic acid gas and this gas is delivered, pure and free from entrained sulphuric acid, to the tent. The generation of hydrocyanic acid gas and its delivery under the tent are almost instantaneous; this secures exposure of scale to immediate contact with the maximum concentrated strength of the hydrocyanic acid gas before there can be either gas loss from normal tent leakage or gas decomposition by air. These features practically mean a guarantee of highest efficiency in scale killing."

This appliance or machine is called the cyanofumer. It is not offered for

sale but is being manufactured in large numbers for the use of orchardists of California under special arrangement with its owner.

In any case, this machine will insure better work at no greater expense than under the former system. Better work is proved by the fact that at the Whittier experiment station, where it has been tested, it has been shown that the machine has a 98 per cent efficiency in delivering full strength of the gas. This is against a 75 per cent loss which is often the case where the gas is generated in an open vessel. The saving from the use of the machine is in both labor and material. The saving in labor may reach as high as 33 1-3 per cent. The saving in material will not be so great, but there is a direct saving in the quantity of acid used. Heretofore excess of acid has been necessary in order to convert all the cyanide and release the cyanogen. A certain excess is still necessary, but because of the method of mixing the amount required is now reduced nearly 50 per cent.

The measuring device is accurate to an extreme degree. The graduations represent solid cyanide in ounces. It is so constructed that by setting the indicator at the required dose and moving the lever up and down once, the exact quantity intended (no more and no less) is introduced into the generating chamber, and with sufficient force to secure proper agitation of the liquids in the generating chamber for instantaneous and complete chemical reaction. The generated gas is immediately delivered, hot, under the tent by its own momentum.

Tents are injured by acid carried on the gloves of operators and by acid spattered on the tents as the result of chemical action. Ninety per cent of the tent injuries are due to acid burns. With the cyanofumer there is no acid handled near the tents. This should save some of the expense which has been necessary in the employment of two men constantly on each 100-tent outfit in repairing damaged tents.

The economy well justifies the expenditure necessary in the manufacture of the machine. The first look at it convinces one that it is well made and thoroughly dependable. The chamber for holding the sulphuric acid is constructed of spun lead and antimony, a combination which is known to resist any action whatever on the part of sulphuric acid. One indication of the completeness of the device, as may be seen in the photo on this page, is the framed dosage schedule prominently placed on the top of the machine.

One hundred of these machines will be tested in California's orange groves this season. A careful inspection convinces us that the appliance will be a complete success. Besides the direct economies another matter may be referred to. Heretofore many orchardists have refrained from fumigating their trees because of the uncertainty and the expense. If the uncertainty may be eliminated and the expense reduced, more general fumigation will result in cleaner trees. Cleaner trees mean cleaner fruit; cleaner fruit means less washing and brushing; less washing means less decay; less decay means higher prices and money saved in icing.

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CURVED ROADS AND PATHS

Written for California Cultivator
By Ernest Branton



OCASIONALLY we meet persons who fail to see the advisability of having curves in either roads or paths. Both are artificial at best, for nature provides none, but as straight lines are less natural than curves it is better to have the latter as nearest to nature and affording greater variety than would be possible under any scheme of planting with straight roads and paths.

Bailey stated a full quarter century ago in American Gardening that curves were desirable for three reasons "They present different views from each part; the drive is hidden from itself; one does not look ahead over a straight and monotonous driveway. The curves augment variety because they force upon one a constant

should be parallel or appear to lead to the same object.

"The nature of the curves should conform somewhat to the character of the landscape. In rough or bold grounds drives may have much bolder and more spirited curves than in tamer places."

Control of Plant Breeding

But a few weeks ago I advised the amateur to take up plant breeding if his taste ran in that direction. He was further advised not to work against nature, but to follow her dictates. Two cases in point come under observation in my own garden, with my particular hobby—gladioli.

The first generation of seedlings from crossing gladiolus primulinus with the common garden gladioli will bring every shade of color except blues and their allies. Therefore do not strive for these colors with G. primulinus. You would gain nothing



A GROVE OF COCONUTS

change of direction and position." Curves are present everywhere in nature; straight lines are not, then why not curves?

The chief argument against curves is their abuse. When they are many and pronounced they certainly are less desirable than straight lines for the latter have the merit of directness and convenience, which abrupt or widely-detouring curves have not. The fewer curves we have and the less these depart from a straight line and yet preserve graceful contour the stronger will the landscape effect be. Bailey lays down the following simple rules for our guidance:

All curves should appear to be necessary or useful. This rule really determines the whole character of the drive. The rest are corollaries to it. Avoid balanced curves—a cork-screw or snake-like motion.

The curves should be direct; their general trend in the direction of the object to which they lead. The drive should go where it appears to go.

"The successive parts should be hidden from each other by tasteful plantings along the borders.

"The branches of a drive should diverge strongly at their junction, and they should usually be wholly or partially concealed from each other by plantings or other objects. If drives diverge, they appear to lead in nearly opposite directions, and therefore have the appearance of usefulness. If the parts have the same direction, one portion appears useless. A broader statement is the following.

"No two drives, or parts of drives,

but a little satisfaction for producing the unusual if you did, for better results in blues may be obtained in other lines of breeding. Crossing with another wild species, G. dracocephalus, you will get nothing but dull reds in the first generation, no matter what the color of the other or hybrid parent. Therefore strive for reds, and if this line of color naturally breaks toward yellow or any other color, follow this natural bent but do not work against it.

Coconuts in California

The coconut palm is grown in but one place in this country, Southern Florida, and there it is not thrifty enough to give it commercial importance. The same might also be true of a few spots in California. To bear a marketable crop of nuts this palm demands more than we can supply. It should have a nearly uniform temperature throughout the year and our winter nights are too chilly. It needs an annual rainfall of about 40 inches and this should be well distributed throughout the year. In this our climate is deficient.

But, the coconut palm can endure exceedingly dry periods for a short time, strong, harsh winds, overflow and wash of roots by salt water and will live through prolonged drouths. A dry season of six months will cut down the crop one-half in the best commercial plantations, but if there is an ample supply of water at the roots, a dry atmosphere is conducive to the production of an ideal crop of nuts. On lands close to the sea or salt in-

land bodies where the roots may reach a constant water supply, the coconut palm should thrive in California. Around San Diego Bay and the adjacent False Bay and in similar positions at Santa Barbara and other points there is no doubt but the palms will thrive, though they bear no edible nuts. They are worthy of a trial.

Coconut Culture

Coconuts with husks on have sprouted while on the floors of warehouses in Los Angeles, and when planted in large pots have grown to fine decorative plants. The nuts could be planted out when well sprouted, but in our climate it would be better to keep them in pots or boxes for at least one year. When planted out they require no further care though they are just as responsive to care and plant food as any plant. But the great amount of neglect they will endure proves that we may grow them. Nuts for planting should be bought with that end in view and be unhusked.

Paying Gardens

One man will take a pound of steel and convert it into a part of a rail for trains to run upon. But another will convert it into watch springs worth many times as much as a pound of rail. So is it with gardens. One may so conduct his acre that it pays but a few dollars in a crop of squash

or pumpkins. Another may take the same acre and by well-balanced, careful, intensive culture, wrest a living from it. This is equally true of the flower garden. Last year I took from a plot of ground 20x30 feet nearly \$100 during the month of July. The crop was cut flowers, sold to a wholesale dealer in Los Angeles. It is all a matter of study and care. There is no secret or secrets about it. What does your garden pay?

It is time to begin to think of the fall bulb planting season. Daffodils, tulips and many of the other bulbs are now ready to be taken up. If dried off and put in the ground a couple of months later a wealth of bloom will result next spring.

Encourage morning glory and other vines which are growing over unsightly board piles, fences, or sheds. They are quickly and easily covered and make a thing of beauty rather than an eyesore.

Stake up the dahlias and do not allow them to drag over in the wind. Also keep down a too liberal supply of shoots. Two stalks per bulb are sufficient.

The quicker growing annuals may yet be planted in seedbed and will give abundant bloom late in the fall when flowers are scarce.

These are the days in which the cultivator and hoe should be kept in action.

TRAVEL COURSE IN CITRICULTURE

(Continued from Page 27)

after the trees are large and the roots occupy all of the space.

DETERIORATION OF CITRUS TREES

By E. U. Slyfield

One of the most striking things about citrus growing is the fact that after 20 or 25 years the trees so often begin to turn yellow, developing mottled-leaf or chlorosis and falling off in production. In most of the older districts this is now becoming a serious problem, and the growers are making every effort to bring their groves back to their former producing power.

Unless something can be discovered to make these groves productive again growers in many of the older districts will have to take the trees out.

On some ranches they are trying the mulching system. This is helping the condition of the trees, but the question at once arises is such improvement permanent or will it be necessary to keep up the mulching continuously?

If the former is true the question is probably solved, as this would be a cheap way to restore the orchards, but if the mulching was necessary permanently the story would be different. In doing this from 20 to 35 tons of mulch per acre is about the amount required. It would cost \$6 a ton under the most favorable conditions, so that the cost would be very high. This would be more than the cost of cultivation, which would necessarily be eliminated. It is now to be determined whether this extra cost would be paid for by the increase in production.

Another system which is advocated by some of the growers is a heavy application of calcium in the form of calcium carbonate. Some are trying to raise the percentage to one per cent in the first six inches of soil. Combined with this treatment a summer and winter cover crop is being grown. So far the results are undetermined, but the advocates of this system think that it will bring the groves back.

The Riverside experiment station has recently leased 20 acres of an old orange grove which has undergone this mottled-leaf depreciation. They intend to put 98 different experiments on this orchard and attempt to find the best system for treating these trees. It is probable that before long they will have some valuable data to help the growers, but until then it is a great question to know what to do.

FOUR IMPORTANT FACTORS IN CITRUS GROWING

By G. E. Geldenhuis

The fame of California's citrus-growing industry has spread throughout the world. In South Africa we are beginning to look to California for ideas, guidance and inspiration. The opportunity of spending a few weeks on this travelling course has given me a new insight into this wonderful industry of Southern California. Everything was not encouraging, but that the industry offers such vast problems kindles the spirit of pioneering and increases the fascination in the enterprise.

The first thing that impressed me—and I am not simply saying this for the sake of flattery—is the kind-heartedness, energy, open-mindedness, receptiveness to new truth, manifested by most of the growers. The citrus grower has solved many problems, climate, bad soil conditions, lack of knowledge regarding the best pruning methods, the combating of diseases and insect pests, frost protection and marketing. In general the citrus grower is only too willing to try something new. He is essentially an experimenter.

The second impression is that as a financial proposition, citrus growing is most successful as a large-scale undertaking. The Arlington Ranch near Riverside, the Chase Ranch and the National Orange Company Ranch near Corona, the Leffingwell Ranch near Whittier, the San Diego Land Corporation Ranch near Chula Vista, the Rancho Sespe and Limoneira Ranch near Santa Paula all operate at least between 700 and 1500 acres. On these large ranches there is opportunity for specialization, efficient supervision, good labor conditions, desirable experimentation, adequate handling and distribution of the fruit.

A third impression that forces itself upon me is the difference in opinion that exists as to the best treatment for the orchard. One farmer dynamites his soil; another tries a peculiar system of cultivation; a third believes that you should not cultivate at all, but apply a mulch; a fourth that bud selection is most important; a fifth that a peculiar kind of pruning will solve the problem. One farmer holds that the tree should obtain its food close to the trunk, another that the "tree should work for its food" and the food material should be in the middle of the row. Very often experimentation is carried on in a very haphazard way. As soon as somebody comes along with a new idea, instead of first trying out this new idea in a scientific way on a small plot with the adequate checks, a whole orchard is treated.

A fourth truth which has dawned upon me is that for the greatest success in the citrus industry there must be a perfect correlation of all the factors. A man must consider the right location for his orchard, he must have a large ranch if he thinks of making his enterprise a financial success, he must study his soil, select his trees, work for the comfort of his laborers, experiment scientifically with fertilizers, mulching and pruning, handle his fruit carefully, pay special attention to grading, packing, transportation and selling.

The Limoneira Ranch near Santa Paula illustrates to a fine degree the perfect correlation of the four factors just mentioned, namely, efficient management; large size; scientific experimentation; and perfect organization.

The attachment of a little card with the number of the picker to every box serves as an example of the efficient management. By this means the number of boxes picked by each man as well as the quality of fruit and the manner in which he picks them can be ascertained at any time. The size of this ranch is about 1200 acres and consequently it is large enough for efficient use of man labor, machine labor, and the conduct of a separate packing house, the second largest in Southern California.

There is a good deal of experimentation amongst citrus growers, but too many depend too much on their memories, apply their experimentation to too large areas, do not provide sufficient checks and consequently suffer losses and obtain poor results. Some very interesting experiments have been and are being conducted on the Limoneira, of which the following are a few:

It has been found by keeping accurate record on one acre of Lisbons that 112 trees per acre give a higher production per acre than 56 trees, and consequently a good deal of double setting is being done.

Removing the wrappings from buds as early as the 12th day has given very satisfactory results.

Throwing sulphate of ammonia, one pound per tree, in the irrigation furrows near the tree and allowing the water to carry the sulphate into the soil is being tried out. Chemical tests of the water a short distance from where it has passed over the sulphate indicate that most of the sulphate sinks into the ground near the tree.

A fertilizer experiment, where ten rows have been treated with sulphate of ammonia, ten rows with blood and ten rows with nitrate of soda, with adequate checks between where nothing has been applied, shows a distinctly healthier green coloring of the foliage in the treated rows. The rows in which sulphate of ammonia has been applied seem to possess the richest green color.

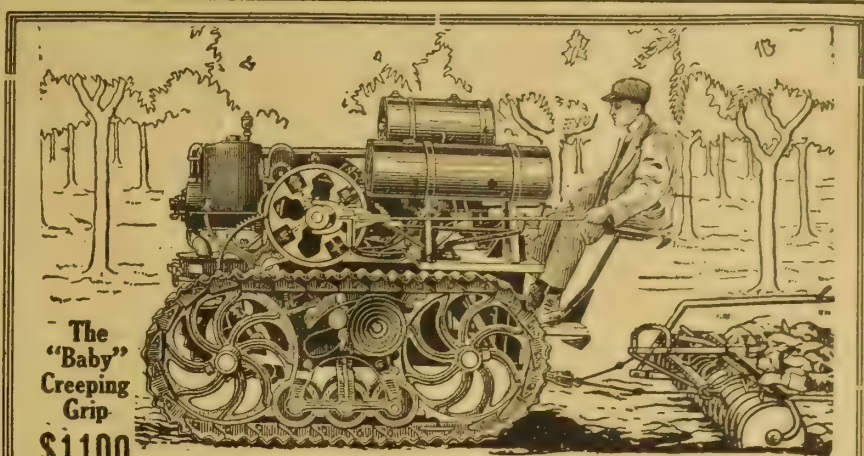
The Limoneira is really getting some definite and valuable results by the application of scientific methods.

The various units in the organization of the Limoneira Ranch interlock to perfection, thermometers in various parts of the orchard indicating the temperature during the cold period, 50,000 heaters ready for any emergency, a large packing house, capacity 130 cars, with modern methods and equipment, the handling of the fruit through the California Growers' Exchange, all give evidence of the best kind of organization.

The Limoneira is a fine laboratory for demonstrating what several of the other citrus ranches corroborate, that efficient management, a sufficiently large-sized ranch, scientific experimen-

tation and perfect organization of the various factors are necessary for the commercial production of citrus fruit. Given the right man, a good sized

farm, rational experimentation, an adequate correlating system, the citrus industry in Southern California is as safe as any other investment.



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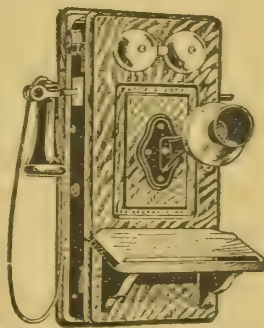
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GROWING ONION SETS IN CALIFORNIA

Written for the California Cultivator
By H. R. Mitchell

THE growing of onion sets in some sections has reached such proportions that it is considered quite a separate issue of truck farming. Not only this, but in the location where thousands of bushels are grown each year they are not favored with a very long growing season such as we have here in California, yet they make a success of the business.

Location

It is not hard to find a favorable location for growing onion sets as their main requirement is suitable soil. Onions prefer a moderate temperature. They are rather adverse to extremely hot locations unless there is a large supply of water applied to the soil in combination with careful and continual cultivation. The culture of onion sets has been successful both on uplands

and coast country in California, and some of the valleys have produced satisfactorily.

Soil

Onions resent a poor soil. Therefore a soil must be selected that is capable of responding to cultivation by working up into a mulch. This does not necessarily mean a loam soil because a quite heavy adobe can be made to do, though it will require a good deal of work to place it in good tilth, and bear in mind that if a barnyard fertilizer is to be used it should be placed in the soil long before planting time that it may be well decomposed before the seed is placed in the soil.

The ideal soil for onion sets is of sandy loam character. This is preferred because a top soil mulch is more easily produced. This is an essential factor inasmuch as it helps greatly to retain the moisture in the soil. Did you ever take a piece of lump sugar and place on top a small quantity of powdered sugar and then place all in about one-eighth inch of water?

Slowly the water will progress up the cube, and when it reaches the powdered sugar it practically stops. The particles are too far apart and the water finds difficulty in rising through it. This same action takes place in the soil where the under part is firm and there is the proper mulch on top. That is why a sandy loam or any soil responding properly to cultivation is preferred.

Time to Plant

Sometimes the early crops are sown during December and January, and planting will continue up till June. For the early crops White Bermuda are good and for fall harvesting plant New Queen and Australian Brown.

Planting

After thorough preparation of the soil or seed bed seed are generally drilled in at the rate of from 50 to 70 pounds per acre. They are allowed to grow thickly because the sets are harvested when about marble size so do not require a great deal of room. The depth to plant the seed depends largely upon the soil, varying from one-half inch on a heavy adobe to one inch on a light sandy loam. The seed should be planted in what is called double or triple rows, that is two or three rows one inch apart, then the distance from one double or triple row to another can be decided by the method of cultivation used. Probably cultivation by horse will be preferred, so that rows should be from 24 to 30 inches apart. After seeding thorough shallow cultivation is essential.

Growing

Naturally it will be necessary to keep all weeds down during the growing period. This again calls for cultivation. The soil should be watched closely to ascertain moisture conditions. It is not necessary to keep the soil soaked. The constant working of the soil will be the one big factor in maintaining the condition of the soil that is desired. When the tops of the onions are six to eight inches high and about pencil size at the crown of the plant they will be nearly ready to harvest.

Harvesting

Examine the sets carefully to see if they are about marble size. This is the most marketable size and when thoroughly graded you will find them by far the most saleable. Have lath trays made in which to cure the sets in the field. These should have solid sides and ends but just strips of lath on the bottom. Make them 36 inches long, 24 inches wide and from four to five inches deep. Take these trays into the field and place them along the rows. Now you are ready to pull the sets. They are pulled by hand and the dirt knocked from the roots. Throw them into the tray about two layers deep and leave the trays in the field until they are thoroughly cured, when the tops easily break off and leave your sets all ready for grading.

Yield

The yield of onion sets per acre varies with location. Five tons per acre is the average, and as high as seven to nine tons per acre is sometimes obtained where a succession of crops is grown.

CANNING VEGETABLES IN THE HOUSE.

It will soon be the time of year when our gardens will be in their prime. The question which will confront the housewife is "Will we can vegetables in the home?" thereby saving the garden products, or "Will we waste this material that might be canned to such good advantage?"

Many people have trouble in canning peas, beans and corn. This trouble may be overcome by thorough cooking. One very satisfactory way is as follows:

Select young and tender vegetables, pack firmly in the jar, cover with cold water and add a teaspoon of salt to each quart. Put on the rubber and top and steam for five or six hours in a boiler or steamer. A boiler may be used in place of a steamer if a false bottom or rack is used to keep the jars from the bottom of the boiler.

In the high altitudes about one-fourth more time must be added to the time given in low altitude recipes.

(Continued on Page 47)



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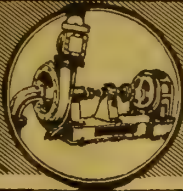
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NOTES ON THE DUTY OF WATER

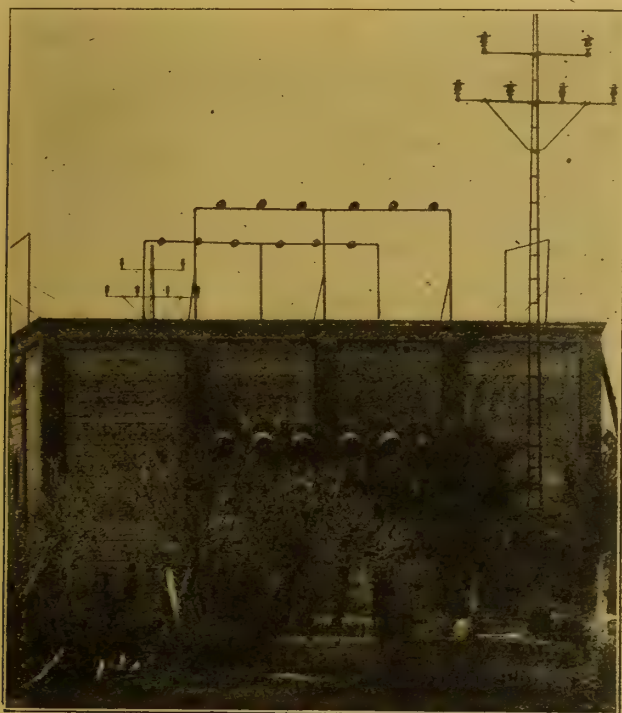
Written for the California Cultivator
By Sacramento Valley Contributor

A PROBLEM that will become more important and more interesting from year to year is how to secure the greatest possible tonnage of crops by the use of a given quantity of water. The farmer who can so manage his affairs and work and cultivate his soil that an acre-foot of water will produce as many bushels of grain or as many tons of hay for him as one and one-half or two acre-feet of water will for his neighbor is not only benefiting himself, but is a benefactor to the community, the state and the nation.

An acre-foot of water, or the amount

the soil a good soaking and provide moisture for deep-rooted plants than when a light irrigation following a good season of winter rain will maintain that optimum moisture condition. A first-class irrigation water supply must provide sufficient for the season of the greatest need.

In the Sacramento and San Joaquin Valleys it is important to give the soil a thorough irrigation in the early spring when water in the streams is plenty. In this way it is possible to increase the acreage that can be irrigated from a stream source and at the same time provide a fairly large total amount of moisture. Too many irrigators wait until well into the summer to begin to use water. And al-



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The Irrigators of the Salt River Valley Have a Great Asset in Water and in Power. Their Power is Secured by the Fall from the Dam at a Cost Which is Merely Nominal.

required to cover an acre of land one foot deep, is really a considerable quantity of water, being 325,850 gallons, or 43,560 cubic feet, the weight of which is 1356 tons.

The amount of water per acre provided by various irrigation districts and companies varies from one to five or more acre-feet per year. The actual need for supplying the moisture necessary for maximum crops varies greatly with the seasons, the crops and the character of land to be irrigated. The requirement the second of two dry years when there is so little rainfall that it does not penetrate deeply enough to "connect" with the lower strata of moisture in the sub-soil is much greater in order to give

most every one should cultivate more—and irrigate less.

There is only one way to determine whether a farm is making money and that is to keep farm accounts. If these accounts are to show not only the total farm profit or loss, but also those factors that made for the final result, then the accounts must embrace every phase of the farm industry and show just where money is being made and where it is being lost.

Pleasant home life is very essential for business success. This is especially noticeable with the business of farming. It requires pleasure that is fostered by cheerfulness to make farmers do their best work and most important thinking and reasoning. It would pay most people to study a little how home life can be made more cheerful and pleasant.

He that turneth from the road to rescue another, turneth toward his goal; he shall arrive in due time by the footpath of mercy, God will be his guide. He that taketh up the burden of the fainting, lighteneth his own load; the Almighty will put his arms underneath him. He shall lean upon the Lord. He that speaketh comfortable words to mourners, healeth his own heart; in his time of grief they will return to remembrance, God will use them for balm. He that careth for the sick and wounded, watcheth not alone; there are three in the darkness together and the third is the Lord.—Henry Van Dyke.

Hawley, King & Co.

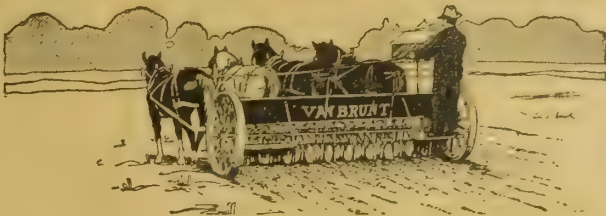
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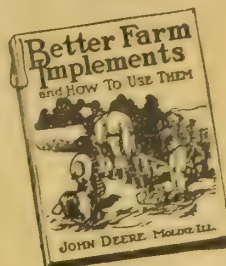
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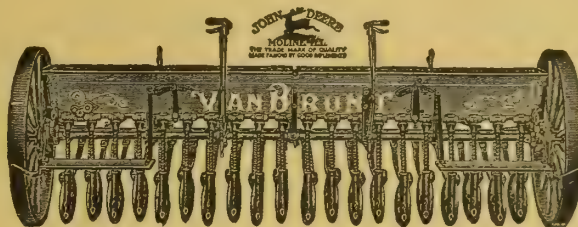
Van Brunt Drills are so called because they are light weight, well balanced and yet so strong that they work entirely satisfactorily under difficult conditions.

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drill. Disc blades are high grade steel kept absolutely clean by spring steel scrapers.

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A Journal of Horticulture and Agriculture

By

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Thursday, July 8, 1915

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

DRY FARMING CONGRESS

A letter from Secretary Faxon of Denver calls attention to the fact that there will be over 20 states represented in the interstate building at the soil products exposition which will be held in connection with the tenth annual dry farming congress in Denver, September 26 to October 10. The secretary predicts that every state west of the Mississippi will be represented by a separate state display. Colorado will doubtless make the most extensive display.

AMERICAN POMOLOGICAL

The annual meeting of the American Pomological Society will be held in San Francisco, September 1 to 3, 1915. Eastern pomologists will come by special trains from St. Louis and Kansas City. These will be made up of special cars, one from New York and New England, one from Washington, D. C., and one from the neighborhood of Columbus, Ohio. Other cars will be made up as the needs demand. There will be sightseeing side trips to the Grand Canyon, the citrus orchards and other sections of Southern California and the San Diego exposition.

SAFE FOURTH

Another safe Fourth has passed to the satisfaction of the older ones and to the dissatisfaction of the youngsters who have been in the habit of celebrating with much noise. In proof of the advisability of a sane Fourth its friends are calling attention to the fact that in 1903 there were 417 cases of tetanus from Fourth of July injuries, also that during the past 12 years 42,786 persons have been killed and injured in these celebrations in

this country. We like the enthusiasm that comes from the bigger racket, but possibly the safety of our people is worth more than the enthusiasm.

SHORT COURSES

The college of agriculture is mailing its announcements of the farmers' short courses which will be given at the University Farm at Davis, October 4 to November 24. There will be courses in general agriculture, dairy manufactures, horticulture, deciduous and citrus, tropical fruits, and olives. There will also be a course in poultry husbandry. All courses are free to residents of California. Many Californians have taken advantage of this opportunity and are today doing better farming because of them. Everyone who can arrange his time so as to be at Davis during these few weeks should do so.

TOURING AMERICA

The American Automobile Association writes of the greatest touring movement this country has ever seen. This is because of two factors; one the educational "See America" and the realization that America affords abundant scenery, and the other the European war which proves discouraging to travel over the Atlantic. In addition we believe we are safe in saying that California's two expositions are another factor in determining much home touring. There have been many parties which have crossed the continent in autos. We are pleased that California's good roads campaign has added much to the pleasure of these visitors.

BIG FRUIT CROP

The review of crop conditions recently issued by the department of agriculture shows that compared with the ten year average peaches will this year produce 128.4 per cent of a crop. Practically all of the fruits are estimated to have far above average crop. Apples are estimated at 106.4, pears 105.3, blackberries and small fruits 103.1. The United States is prepared better than ever before to feed the world. Best of all, the one state in the Union which stands above all others is California. Compared with the ten-year average California's general and crop condition is 112.8. Many of the states fall below this ten-year average. California's closest competitor is Kansas with 112.1 per cent. Nebraska comes next with 111.2. Most of the others fall around the 100 mark, with Vermont the lowest with 93.6.

BARLEY PORK

Experiment station work in various states and investigations followed up by the bureau of animal industry of the department of agriculture have shown conclusively the value of barley as a pork producer. One hundred pounds of barley is not equivalent to 100 hundred of corn or wheat as to quantity of pork produced, but one thing has been proven, and that is that the best pork in the world is made from barley fed hogs. In Great Britain and northern Europe barley takes the place of corn entirely for pork production, producing finer quality, both as to hardness and flavor.

California has been somewhat backward in the production of pork. It has been almost invariably explained that "California is not a corn state and never will be a pork producing state," but if the best pork on earth is produced by barley and California

is the biggest producing barley section in the world, why should there not be a combination which would make this state noted the world around as the producer of the finest bacon and other pork products?

SAVE THE WASTES

More than ever before are the fruit growers studying the question of wastes in orchard and packing house. The old-time method of keeping hogs for using up some of the wastes of the orchard is receiving some attention. But there are more valuable products that can be made of orchard products than pork, and we believe the time will come when the margin of profit will be determined by the facilities for handling wastes. Ordinarily these may be secured only by uniting with one's neighbors, though in some communities private capital is solving the question.

Another case in point is that of Mr. Kingsbury at Redlands who at his plant manufactures California fruit and vegetable products, giving employment to many people and saving material which would otherwise be used simply for fertilizer, or even worse, be dumped into the wash. In looking over the products of this one institution one sees that they cover orange and lemon peels, citrate of lime, essential oils of lemon and orange fruit pastes, fruit salts, in all 48 different products.

Every year California loses millions because of low grade fruits or overproduction or quickly perishable products. The cannery and the dryer have saved much of this waste. We need an extension of effort along these lines.

THE CITY FARMER

Scarcely a week passes, and some weeks scarcely a day passes, that some Easterner who has spent most of his life behind the counter or in some profession calls at the Cultivator office and asks as to the advisability of his settling in California and taking up the calling of fruit growing or of farming. Only a day or two ago one of these, a remarkably bright gentleman whose life had been spent behind the counter called. He would have, after remaining in California a few weeks longer looking about for a suitable location, approximately \$3500 with which to purchase a farm, equip it, build a home and keep his family until the farm was paying. Where would be the best place for him to settle, and how should he proceed that his little capital might be best secured? His sole farming experience had been the keeping of a few hens in the backyard. He was born in the city and had never left it.

If it were not for the fact that we have seen similar ventures result successfully such an incident would only give a headache. Even then it appears to us that the chances against his success are great. Many city people have an idea that all that is necessary to secure a competence on the farm is for them to have the wherewithal to buy the raw land. It takes time; it takes capital; it should take experience to fit up a place, even in productive California. We Californians have been wonderful advertisers, and many Easterners are taking us at our word and have come here to prove the statements we have made. Californians should be very careful in writing Eastern people who have no knowledge of farming regarding the great opportunities of this section.

Agricultural Notes

Our exports of wheat and cotton have fallen off heavily during the month of June.

The olive shortage in the new crop in the Bierut, Syria, district is estimated at 25 per cent compared with last year, reports Consul General Hollis.

The pink boll worm of cotton is a very serious pest in practically all the cotton growing districts of the Old World and it is also established in the Hawaiian Islands.

Although egg imports into the United States are increasing, a 400-case shipment of American eggs was received last month at Sydney, Australia, from San Francisco.

The wheat crop of New South Wales, Australia, will be 3,000,000 bushels below estimate, the result of extremely dry weather which reduced the yield per acre and also necessitated the cutting of some wheat for fodder to feed starving stock.

The Holstein Friesian Association of America last year paid out \$4,919 in prizes at 25 fairs. At its annual meeting held the first of June at Syracuse, New York, all the old officers were reelected. The secretary is F. L. Houghton of Brattleboro, Vermont.

The American Royal Live Stock Show will this year be held at Kansas City the week of October 4-9. Arrangements have been made with the railroads to forward the San Francisco Exposition exhibits at the close of the American Royal on solid special trains operated on passenger schedules. The live stock show at the Panama-Pacific opens October 18.

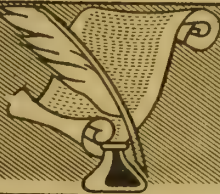
A recent publication of the Japanese foreign office states that 358,711 Japanese subjects were reported as living abroad on June 30, 1914. In the United States (proper), 80,773; Hawaii, 90,808; Philippine Islands, 5,179; Guam, 119. This gives the United States and its possessions half the Japanese residing outside their own country. Canada has the next largest number with 11,959.

In all the principal plazas and gardens of Seville, Spain, in the summer time, moving picture screens are erected and small tables and chairs set out, the exhibitors either making their profits from the drinks sold or by rental of chairs at two cents each. Thousands of people go nightly to the different plazas and gardens, and the entire life of the city for about four months centers around these moving picture shows.

The International Association of Sugar Factories estimates as follows the reduction in European beet-sugar acreage for the coming season: Austria-Hungary, 35.1 per cent; Germany, 31.9 per cent; Holland, 16.3 per cent; Bulgaria, 21.3 per cent. Italy's acreage will show an increase of 37.3 per cent. The beet cultivation of Belgium is placed at 74,131 acres, a decrease of 44,479 acres, and that of Russia at 2,159,692 acres, an increase of 66,718 acres.

The department of agriculture keeps up a special motion picture factory at which it makes the films it uses in promoting scientific farming. Thus the bureau of animal husbandry had a special film to show Southern farmers how to make and use the dipping vats that would free their herds of ticks. It also showed films that illustrated the correct ways of handling meat, breeding cattle, and raising poultry. The good roads division and the forest service have made a similar effective use of motion pictures

Agricultural News Notes



of the Pacific Coast

Northern California

During last month 2,000 bales of Sacramento hops changed hands.

Members of the Little Lake farm bureau of Mendocino County held an all-day meeting and picnic at Baechtel's grove on July 4.

Growers of Nevada County expect to make a business of seed potato growing as their potatoes are so far free from disease of any kind.

Prune orchardists of Gridley, Butte County, are sending for colonies of lady bugs from the state insectary to fight the aphids in their fruit trees.

The Palermo Land & Water Company has been ordered by the state railroad commission to sell water to owners of all lands whose deeds call for it.

The asparagus business of the Marysville section of Yuba County has increased 300 per cent in the last year, according to figures compiled by the various freight offices.

Warden Johnson of San Quentin is urging rice growers to send in orders for rice bags at once. He reports that all bags on hand are sold out and that he is only taking orders for future delivery.

County Horticultural Commissioner Earle Mills of Butte County states that the orange crop will be light this year, possibly 75 per cent of normal, but that indications are for over a 100 per cent crop of olives.

The university farm at Davis has loaned its milk testing apparatus to the Sacramento Valley exposition exhibit at the Panama-Pacific. A student of the university farm is demonstrator in charge.

The award of the grand prix in the international contest on dried apples, including a gold medal, at the Panama-Pacific International Exposition, has been made to Oda Brothers of the Sebastopol district.

The rice crop of the Gridley-Biggs-Richvale region of Butte County is reported as only about 60 per cent of normal on account of the cold spring which caused a great deal of the seed to rot in the ground.

The Santa Rosa Cured Fruit Association has cleaned up all the 1914 crop and has already sold ten carloads of this year's prunes. Estimates place the stock yet remaining as between 30 and 40 carloads.

Orland and surrounding sections of Glenn County have been suffering from a pest of grasshoppers. Grasshopper catchers which have been successfully used by government experts in fighting the pests are on exhibition at Orland.

The board of supervisors of Shasta County has voted unanimously to assist the farmers of Hat Creek Valley to open Big Springs, their main supply for irrigation water. The spring was filled by mud flow from Mt. Lassen.

Redding, Shasta County, is planning for a big fair in September. Trinity, Siskiyou, Modoc and Lassen Counties will join with Shasta in the fair. The exposition's name is The Northern California Exposition Live Stock, Agricultural, Poultry, and Mineral Show.

Central California

The Tulare County cannery started work on apricots on June 16.

The Hanford cannery will not make any run this season on apricots.

The California Winery Association has cancelled all grape contracts.

The San Joaquin Valley Sugar Company opened its mill on July 2 at Visalia.

The Associated Raisin Company has issued a new price list on holdover raisins of the 1914 crop.

The green fruit season is in full swing in Tulare County. Canneries announce that they will run full shifts.

Orchardists of Kings County are considering a proposition to pool the peach, apricot and prune crops of the county.

Between four and five sections of dry feed were burned over by a fire in the Deer Creek district of Tulare County.

Contracts have been closed for the sale of 5000 tons of alfalfa, which is to be shipped from Porterville via Panama Canal to New York.

Pomona Grange of Tulare County held its regular quarterly session at Dinuba June 10. The next session will be held at Tulare September 9.

A shipment of California dried fruit aboard the steamer Portland has been seized by the British government and is being held at Kirkwald, Scotland.

A movement is under way in Tulare to organize an association of local fruit growers to take advantage of the market provided by the California Growers' Association.

Green fruit packers of the Fresno district, it is reported, have decided to handle very few peaches this year. Most of the growers, therefore will be compelled to dry their fruit.

The Tulare cannery operated by the California Growers' Association is putting up between eight and ten tons of apricots a day, according to General Manager Vernon Campbell.

Citrus growers of Lindsay, Tulare County, recently listened to an address on fumigation for destroying gray scale by Prof. H. J. Quayle of the Riverside Experiment Station.

The Zante Citrus Association of Tulare County has chosen the following directors for the coming year: Wood Sandidge, H. A. Jones, S. S. Hough, E. A. Marshall, E. E. Graham, W. J. Davis and J. F. Canty.

The Central California cannery has already contracted for 3000 tons of peaches. The cannery will probably open on the 15th of July with between 500 and 700 people on its weekly payroll.

Members of the American Seed Trade Association took an automobile trip from San Jose through the great seed farms of Santa Clara County June 25 as one feature of their convention.

The newly organized Cupertino Fruit Growers' Association has been offered a \$25 a ton price for canning apricots. This offer was refused, all members declaring that they would prefer to dry their fruit unless they could get at least \$35.

Southern California

Sericulture is urged as a future industry for the Palo Verde Valley.

A big addition is being built to the David Hewes orange packing house at Orange.

Shipments of navel oranges are practically ended and Valencias have the market to themselves.

There is an acreage of about 1,200 planted to beans in the Buena Park district of Orange County.

The only orange packing house to have a forewoman instead of a foreman is that of the Covina Heights Growers, which is in charge of Miss Agnes Walsh.

One hundred members of the Covina Farmers' Club enjoyed their regular monthly meeting and picnic at the citrus experiment station at Riverside on Saturday, June 19.

Farmers of Perris, Ethanac, Menifee, Lakeview and Moreno, in Riverside County, are endeavoring to get together in an association to secure the services of a farm adviser.

John Arneill of Camarillo has been selected by the Ventura County farm bureau to revise the proposed hog cholera ordinance and put it in shape for presentation to the board of supervisors.

W. F. Herbert of Nordhoff has been chosen by the directors of the Ventura County farm bureau for the position of squirrel inspector. This position was created by county ordinance this spring.

The San Dimas Lemon Association at its recent quarterly meeting spent some time in discussion of daylight fumigation. A resolution was passed asking the state experiment station to investigate along this line.

Preparations for the Sixth National Orange Show to be held in San Bernardino February 17-24, 1916, have been started on an extensive scale. F. M. Renfro of San Bernardino will again be general manager of the show.

The Blythe chamber of commerce has asked the senate committee on rivers and harbors to visit the Palo Verde Valley. The members of the chamber hope to get a government appropriation to aid in river protection work.

The Sugar Beet Growers and Manufacturers' Educational Association, recently organized for the mutual benefit of farmers and manufacturers by co-operation with the bureau of plant industry of the United States department of agriculture, met in Oxnard June 26.

At Brawley, in Imperial County, there meets every afternoon the cantaloupe cabinet, whose business it is to distribute the valley's shipments of cantaloupes to all parts of the United States. This cabinet is presided over by O. W. Schleussner, market assistant of the United States department of agriculture.

The citrus station committee which had in charge the purchasing of the new experiment station site at Riverside has received from the board of regents of the university the full amount of the purchase price, and the university has now acquired 471 acres of land on the slope of Box Springs mountain near Riverside.

The Coast

Hog cholera is stated to be causing great losses in the Yuma district of Arizona.

A shipment of 2000 Sonora cattle went through Nogales recently, bound for Montana.

Members of the Spokane Poultry Association have decided not to hold the usual December show this year.

Fifteen hundred head of steers were shipped from Silver City, New Mexico, last week at an average price of \$35.

Multnomah County, Oregon, will receive \$12,648 of state money for its county fair, to be held September 14-19.

Live Stock Inspector Larson of Globe, Arizona, estimates that the cattle shipments from Gila County this year will run over \$1,000,000.

Directors of the Cascade International Live Stock Show are making plans for the big show which will be pulled off in November at North Yakima, Washington.

Twenty-five hundred persons were served at an open-air barbecue at Corvallis, Oregon, at which farmers of Benton and Linn Counties were entertained by merchants of Corvallis.

Manager H. Q. Robertson of the Maricopa County (Arizona) Fair at Mesa is anxious to have entries made as soon as possible so that space may be arranged. No entry fee will be charged.

Arizona railroads have announced that they will charge shippers cost of cleaning and disinfecting cattle cars, as required by federal regulation. This charge amounts to \$2.50 for single deck and \$4 for double deck cars.

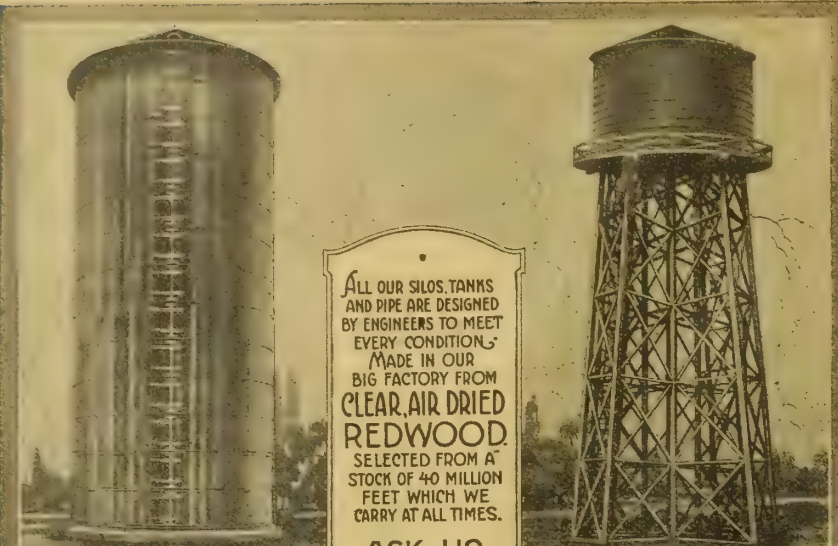
Subscribers to the \$25,000 California bridge fund for the Colorado River bridge at Yuma are going to get their money back. The last California legislature appropriated \$25,000 to reimburse the subscribers and the money is now available.

The board of Trade of Higley, Arizona, will in future hold its monthly meetings with the farm adviser. The next meeting will be held on Friday, July 23, and will be addressed by Prof. Enger, irrigation specialist from the University of Arizona.

The Farmers' Union of Chandler, Arizona, and the chamber of commerce held a rousing joint meeting Thursday, June 24. Farm Adviser Armstrong of Maricopa County was present and told how to increase the yield of alfalfa seed.

The University of Arizona is in the market for two good Jersey cows to be added to the university herd and used for demonstration and show purposes. Anyone having suitable stock will do well to write to Director R. H. Forbes, Tucson, Arizona, describing the cows offered, giving registry number and price wanted.

For the purpose of selecting a site for a government experiment station M. A. Carlton, head of the division of cereals, is visiting the district along the Columbia River west of Spokane. Government funds have already been appropriated for the securing of the site. The principal work of the station will be to improve wheat.



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Live Stock and Dairy



CALIFORNIA IS SEVENTEENTH STATE IN PRODUCTION OF PERCHERONS

By Wayne Dinsmore, Secretary Percheron Society of America

CALIFORNIA stands seventeenth in the United States in Percheron breeding. During the fiscal year ending October 31, 1914, California breeders recorded 77 American bred colts in the Percheron Society of America. This number was recorded by 24 members who registered a total of 76 head and by one non-member who recorded one animal.

The majority of the animals registered during the time specified were colts foaled in 1913, although the figures include some produced in 1912 and some in 1914.

Percheron breeders in California who have registered their animals are as follows: In Alameda County, Wm. Bond; Butte County, Friesleben Estate; Fresno County, J. J. Schrock; Imperial County, California-Mexico Land & Cattle Company; Lake County, O. C. Thompson; Lassen County, Wm. Brockman & Son; Los Angeles County, Elliott-Brant Rancho, August Freese, E. R. Maier; Mendocino County, J. C. Johnson, J. L. McCracken; Modoc County, J. L. Harvey, T. M. Harvey; Riverside County, F. L. Hall, A. J. Stalder; San Bernardino County, R. L. English; San Francisco County, Whitehall Estate, Inc.; San Joaquin County, F. I. Hodgkins, H. G. Learned, E. Miller, C. A. Peninger; San Luis Obispo County, California Polytechnic School; Santa Clara County, O. Jenkins; Ventura County, G. J. Read; Yolo County, H. P. Eakle, Jr.

Percheron Prospects

The most extraordinary conditions that have ever confronted American Percheron breeders prevail. Importations have been wholly stopped since August, 1914. Export trade in horses has grown to numbers and values never before realized. Prices on horses have suffered less than on any other class of live stock. The general depression in business which has prevailed since the war began has not been sufficient to prevent an increased demand for Percherons with rising prices on the best.

Draft Horses in United States

About eight or nine thousand American bred Percherons are now annually produced and recorded. The registration of pure bred draft horses of the other draft breeds; Clydesdale, Shire, Belgian, French Draft and Suffolk, amounts to approximately 4000 animals annually, so that only 12,000 or 13,000 pure bred draft American bred horses are being produced annually and recorded. As the sex runs about half and half this means that but approximately 6000 pure bred draft stallions of all breeds are now being produced annually. This is a small number in proportion to the 23,000,000 horses owned in the United States, and it is inevitable that prices must rise on good pure bred sires of any breed.

Foreign Trade

The marvelous gain in exports of horses is the most marked development of the general trade. Total exports of horses from the United States to other countries (per data supplied us by the United States board of foreign commerce) amounted to but 8060 head, valued at \$1,286,369, for the last five months of 1913. During the last five months of 1914 exports totaled 78,799 head, valued at \$15,439,604, a gain of more than \$14,000,000. Tabulated, our exports by months for the last eight months are:

EXPORTS 1914 AND 1915

Month	No. head horses	Value
August	804	\$ 96,706
September	7,146	999,287
October	12,091	1,918,433
November	28,071	5,034,353
December	30,687	7,390,845
January	34,643	7,779,395
February	36,960	9,253,787
March	33,694	8,688,974
	184,096	\$40,561,760

Prices Widening

The sales, both public and private, in the last four months show a great improvement in the discrimination exercised by buyers. Animals of approved conformation and soundness have been much sought after, and higher prices have been paid for such animals than were paid a year ago. Percherons of faulty conformation, lacking in size, or unsound, have not been in demand, and very low prices have been paid—less than similar animals brought last year. Good Percherons are from \$75 to \$100 higher, and inferior ones from \$100 to \$200 lower. Such keen discrimination is a favorable sign and promises more rapid improvement than has occurred heretofore.

A Warning

The keener judgment manifested by purchasers carries a warning to breeders. If profits are to be expected from future operations good sound sires of A 1 type must be used, and the colts must be liberally nourished from birth until matured or sold. Grain should be given by the time the colts are a month old and should not be discontinued, summer or winter, until the animals are at least three years old. The superior development of the French colts, as compared with most of those reared in this country, is directly traceable to the fact that the French feed their colts grain while they are on pasture even where the grasses are unusually abundant and nourishing. Half a pound of grain per day for each 100 pounds weight of colt is none too much for weanlings, yearlings, or two year olds, even when on good pasture. Stunted colts never do recover their normal conformation, and excuses are of small avail when buyers are purchasing.

DEXTER-KERRIES

Referring to a query which recently appeared in the Cultivator as to a breed of diminutive Irish cattle, a subscriber sends clipping as to these "vest pocket" cows. From this we quote:

"And they are real cows, too, that give quantities of milk and eat grass and moo just as the big cows do. Someone has aptly called them 'vest-pocket' cows, because of their size compared to the ordinary run of cows. Their real name, however, is Dexter. "This diminutive breed of cows stands two inches less than a yard in height, measuring from the top of the shoulder to the ground. And from the shoulder to the tip of the tail they measure but two inches more than a yard. Their average girth behind the shoulder is not quite a yard and a half. But these little fellows often weigh as much as 400 pounds; so you can readily see they could scarcely be considered toys or be carried in a man's vest pocket."

In addition we may quote from "Types and Breeds of Farm Animals," by Plumb:

"Characteristics of the Kerry. There are two types of Kerry cattle—the 'true Kerry,' which is usually black, and a smaller type known as the 'Dexter-Kerry.'"

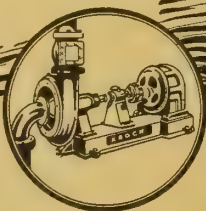
"The true Kerry is a small breed of dairy cattle. The color is black, though red sometimes occurs. White may occur about the udder or scrotum, but is not desirable. The lean head carries upstanding slender white horns with black tips. With cows the neck is slender and long, the body of moderate proportions, the neck slender and long, the body of moderate proportions, the legs fine and long, and the udder large with medium-sized

Krogh Pumps

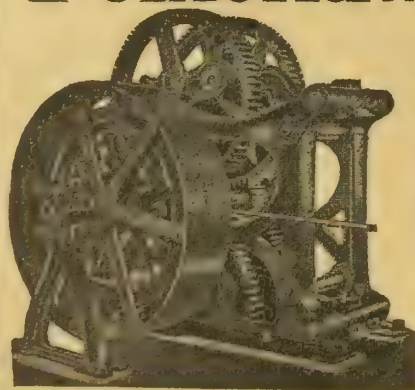
Don't fail to see our big exhibit at the San Francisco Fair. Also bear in mind that Krogh Pumps are supplying all the water for the big fair. This must signify superiority.

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Write for catalog 103 with valuable information on irrigation.

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teats. In size this is one of the small breeds; the cows often weigh from 500 to 600 pounds, and frequently do not exceed 40 inches high. The bulls are larger, weighing 800 to 1000 pounds.

"The Dexter-Kerry is of unknown cross. Some authorities think that a

Have just finished a year's official test on a pure-bred Jersey cow, by name Goldie Beechfield. This cow was four years old when she started her test and is the first cow in Kanabee County to have an official test made on a year's work. She produced 10,131

The best method for destroying lice is to select a standard coal tar disinfectant and make this up according to the directions of the manufacturer. This should be placed in a dipping tank and all hogs treated. It has been found that 3 per cent cresol, 5 per cent

sary to dip the young pigs. To exterminate lice during cold weather, it is best to use crude oil, as this will not cause the animals to take cold. Some recommend the use of common sulphur, which they spread in the hog's bed. This will be melted by heat of the body coming in contact with it, which will cause sulphur fumes to rise, thus killing the lice.



IMPERIAL VALLEY HAY FIELD

Mr. Dexter, nearly a century ago, developed the breed by crossing Kerries on other stock. Some others regard it as a result of selection. This type is more blocky, shorter-legged, heavier of head and neck, and more beefy in type than the true Kerry, and, as seen by the author, much smaller. The color also is variable, being black, red or roan. There are wider variations among the Dexter-Kerry branch than in the true Kerry. In each case the udder is unusually well developed, showing large capacity in proportion to size of body."

CALIFORNIA ALMOST TICK FREE

The work of eradicating the tick in California will probably be completed during the present year, it is said by the federal authorities in charge. Only a section of San Diego County is now infested with the cattle tick. The rest of the state has been entirely cleaned of this pest at an average expense of only \$2.46 per square mile. Of this sum the federal government paid \$1.06 and the state the rest. The remarkable cheapness of the work, the cost per square mile being much less than usual, is explained by the fact that the work was done in a territory which was not thickly settled. The following table shows the expenditures since the systematic campaign was begun in 1907. Since then a total of 73,197 square miles has been disinfect-

Year.	Dept. of Animal Industry.	Bureau of State.	Square miles re-leased.
1907.....	\$ 18,992	\$ 6,720	\$11,517 6,570
1908.....	20,785	3,360	8,642 21,136
1909.....	24,816	2,515	8,119 8,000
1910.....	21,160	3,210	5,995 32,271
1911.....	17,307	2,640	2,636
1912.....	11,594	2,963	830 750
1913.....	7,101	1,605	580 1,834
1914.....	5,077	310	300

\$126,832 \$23,523 \$35,983 73,197

On March 1, 1915, since the above data was compiled, 3,501 square miles were released, leaving only 720 square miles in quarantine. The greater portion of this is included in one ranch.

COW-TESTING PAYS

AFTER several years' successful work in California Dairy Specialist Warren B. Thurston was transferred from this state to Minnesota. Touching upon his work and the work being conducted by the dairymen of that section, Mr. Thurston writes:

"Up until the time I came into this community but very few people knew what their cows were doing, and although there were some pure-bred cows in the county their production was unknown, but that is partly changed now and many are regularly weighing and testing their cows' milk.

pounds milk and 620.18 pounds fat. This is not bad for northern Minnesota. This cow will be tested again next year, and it is expected that she will make 800 pounds fat.

"Many pure-bred sires and some pure-bred cows have been brought into this community, and the standard of dairying is being rapidly raised.

"The local creamery with which I am working has increased both the quality and quantity of its output. When I came here the average score of the butter was about 89, and now the average score is 94. Prices paid patrons have been raised from about five cents under New York quotations to New York quotations. Cream grading has been instituted, and practically all the cream delivered is now first grade. The results thus far have been very gratifying. The dairy and creamery industry is in a fair way to prosper as a result of better cooperation and better methods."

TEN GUERNSEY COWS
AVERAGE 947 lbs. FAT

Large and Economical production is the key to larger profits. The Guernsey Cow is a sure way to increased profit.

Shall we send literature?

Guernsey Cattle Club,
Box F Peterboro, N.H.

zenoleum or a kerosene emulsion will make especially useful dips. All hogs should be treated at least once a year and special care exercised to make certain that the brood sows are free from lice before farrowing. If this method is followed it will be unneces-

"Jackson MADE"

Write for Catalog No. 48 F

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Signed.....

Address.....

Farm Bureaus

Humboldt County, A. V. Christiansen,
County Agent, Eureka

Loleta, July 1.
Freshwater—Double meeting Freshwater, Bayside Centers, July 2.
Arcata, July 3.
Ferndale and Loleta, July 6.
Rohnerville Center Day, July 7.
Field Day Rohnerville Section—Carlotta Center Evening, July 8.
Office, July 9.
Kneeland Center, July 10.
Bridgeville, July 11.
Blocksburg Center Meeting, July 12.
Via Alder Point and Field Day, July 13.

Field Investigation Hill Country, July 14.
Field Investigation Pest Control, July 15.

Shiveley Center Meeting, July 16.
Via Garberville and Linser Ranch, appointments only, July 17.

Garberville Center Meeting, July 18.
Ettersburg Center Meeting, July 19.
Field Day—Enroute Wilder, July 20.
Mattole Center—Meeting Union Mattole, July 21.

Via Capetown, Appointments only, July 22.

Dows Prairie Center Meeting Evening, July 23.

Directors' Meeting Eureka, July 24.
North County Field, July 25.

Via Trinidad and Orick, appointments only, July 26.

Bald Hills and Martins Ferry, appointments only, July 27.

Orleans Country, appointments only, July 28.

Return.

Orick Meeting, July 30.

Loleta, Dairymen's Picnic, July 31.

The problem of grasshopper control promises to be a serious one in this county. I have had to do some original work because of the extensive stock operations through the infested sections. The original work consists in getting some sort of a container which will allow the hoppers to eat freely of the poison and still be strong enough to keep out the stock, and cheap enough to insure use in large quantities. I think I have succeeded and this season will prove the correctness of my theory.

Maricopa County, Arizona, Jas. A.

Armstrong, County Agent, Phoenix

Lehi Farm Improvement Association, July 1.

Mesa County Fair, July 5 and 6.

Meeting of local leaders in Phoenix, July 8.

South Side Farm Improvement Association, July 13.

Higley, July 23.

Chandler, July 29.

Gilbert, July 30.

A wallow for hogs that is full of clean water all the time is believed in by H. Clay Parker, member of the South Side Farm Improvement Association. Mr. Parker is afraid that the ordinary mud hole would spread disease among his swine, also that the hot sun would be too much for them, consequently he has made a shallow concrete wallow that is continually fed by a leak from the ditch. It would be very easy to cover a wallow of this kind by a broad low shade. It also serves as an ideal place to treat lice by placing oil on the surface once in a while. It is located under one ditch and higher than another so that it can be quickly flushed out.

A corn club has been formed by ranchers in the Higley District. A limited quantity of Mexican June corn, Sacaton strain has been distributed by Farm Adviser, J. A. Armstrong to men who wish to try it out for seed corn production.

The prize for the winner has not been discussed yet.

Grasshoppers are having no "cinch" at Liberty this season. Some time ago Dr. A. W. Morrill and Farm Adviser Armstrong attempted to poison them on the ranch of J. H. Knight at Liberty but did not have the success demanded by them. Since that time the office of the state entomologist has had a man stationed in that section and on Monday, June 28, a demonstration was made using a hopper dozer constructed especially for the purpose of catching grasshoppers before they are old enough to fly.

Alfalfa seed was the subject dis-

cussed by the farm adviser at the last meeting of the Chandler Farmers' Union. During the discussion it was shown that an alfalfa blossom is so constructed that it must be broken open before it can be fertilized. Bees do this naturally but in the absence of an abundance of bees, it might be well to assist them by mechanical means. Milton Fowler has gone over one of his fields with a float. The operation did good in setting seed but it also broke the alfalfa down thus causing some damage. It was suggested at the meeting that a barbed wire dragged several times across a field in full bloom might have the desired effect on the blossoms without doing any damage.

J. Stanley Howard has devised a very clever scheme to avoid some of the disadvantages of using the adobe hole. He has built a concrete wall through the middle of the water hole leaving one-half dry. The cattle drink over the wall. In some localities there is enough fall to the ground so that water may be stored in a water hole but drawn out by means of a pipe and used in a drinking trough lower down.

Blackhead in turkeys is proving destructive in certain parts of California and Arizona according to dispatch from the College of Agriculture at Tucson. It is recommended to quarantine all suspected birds immediately to prevent spread of the disease by water. It is also well to clean up premises and use permanganate of potash in the drinking water.

M. C. Tucker from Byers, Texas, has finally been chosen to be the tester for the Mesa, Chandler and Gilbert Cow Testing Association. Mr. Tucker is a graduate dairyman with three years practical experience in scientific dairy management.

San Diego County, H. A. Weinland,
County Agent, San Diego

Winter Vegetable Union.—A discussion of the marketing of San Diego County products was the first question taken up by the farm bureau after its formation a year ago and has gradually worked its way around until it has formed itself into two or three different lines of endeavor.

First the marketing committee of the farm bureau has been encouraging the curb market in San Diego in an effort to get public sentiment aroused to the point where a demand will be made upon the city of San Diego to establish a municipal market similar to that in other cities of the country. This will be a direct benefit, not only

to the farmer who lives close enough to the city to haul his produce to market and who has time to dispose of his products direct to the consumer, but also will be of great benefit to the purchasers in the city. This, however, is but a small part of the problem. The city of San Diego in its present size cannot consume all the small fruits and produce that can be raised within the county. It has been observed by many people that the climate of the county, particularly of the immediate bay region, is especially favored and that it is possible to raise vegetables later in the winter than in most any part of the state or of the west. Tomatoes at Christmas time and even as late as the 1st of February are not altogether uncommon. Peas can be harvested almost throughout the winter in especially favored localities. This situation is one that should be taken advantage of by the ranchers of this district.

The northern and eastern cities of the United States during the later winter months are almost destitute of vegetables of this character and the market is always good. The only thing that is necessary is for the farmers to organize sufficiently so that what they raise will be sufficient to warrant putting the marketing of it in the hands of a competent manager and so that they can take advantage of the better freight rates on large quantities.

A committee of interested ranchers has been working on a plan of this nature for some time. Several districts have taken hold of the plan quite enthusiastically and it is expected that more will join with them shortly in order to make the movement a great success.

Alameda County, Walter Nixon, County Agent, Hayward

Hayward, July 6.
Castro Valley, July 9.
Murray Township, July 12.
Pleasanton, July 15.
Oakland, July 16.
Irvington, July 20.
Centerville, July 23.
Newark, July 26.
Niles, July 28.

Cochise and Santa Cruz Counties,
Arizona, A. L. Paschall, County Agent, San Simon

San Simon, July 8, 10 a. m., J. J. Jones, farm, F. Scoble, leader; 2:30 p. m., J. R. Somerville, leader. July 9, 10 a. m., Peter Jensen, leader. 2:30 p. m., John Kirby, leader. July 10, 2:00 p. m., farmers meeting, Guy B. Sisson, leader.

Portal, New Mexico, July 12, 2:00 p. m., Wm. A. Stuart, leader.

Rodeo, New Mexico, July 13, 10 a.

(Continued on Page 42)

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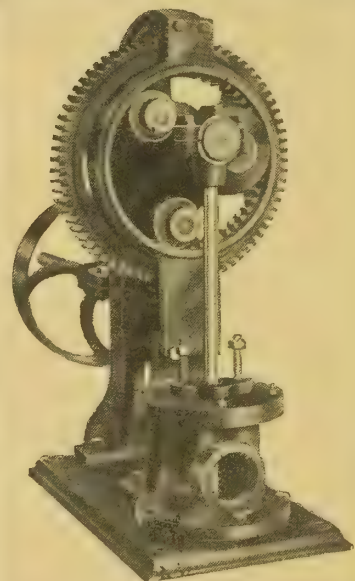
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1 lb. 25¢; 5 lbs. \$1.00; 10 lbs. \$1.80 F. O. B. Los Angeles
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Hill Street Between 4th and 5th.



Poultry for Profit



THE UNIVERSAL POULTRY SHOW

THE Universal Poultry Show is to be held at the Exposition Grounds at San Francisco, November 18-28. Entries close October 15. This show should go down in history as one that reflects great credit upon the intelligence and progressiveness of American poultry breeders and one that will result in inestimable benefits to the industry in general. The egg laying contest held at this exposition and the poultry in the sales department which is superintended by Judge W. S. Russell are viewed by thousands of people. It is therefore only reasonable to suppose that the real poultry show in November will attract unusual interest.

Educational Features Being Planned

An effort is being made to get some of the agricultural colleges, universities and poultry departments to stage educational exhibits in the poultry show buildings. Congress Hall, a large auditorium in the live stock office building, is within a few feet of the show rooms. It is properly equipped for lantern slides and moving pictures and it is the intention to hold lecture courses and demonstrations here.

Meeting of the American Poultry Association

The members of the American Poultry Association have voted to hold their annual convention at the time of the Universal Poultry Show. It will probably be held in Congress Hall on the exposition grounds. There will be an important business meeting and no doubt a great educational program with experts from all parts of the country. The program of the American Poultry Association can be obtained from the secretary, S. T. Campbell, of Mansfield, Ohio.

Organize and Make Car Lot Shipments

The poultrymen in a number of states are making an effort to assemble a carload of poultry at some central city, and have the car shipped in charge of one or two competent men. The expense in some cases will be pro rated among those who send birds and in other cases the fair commissioners from the state will pay a portion or all of the expenses. We suggest that the poultrymen in the different states take this matter up and organize for this purpose.

If any breeder cannot interest enough fanciers to make a small lot shipment or a carload lot, then he can well afford to send a display of his own birds on his own responsibility. You need no further proof that birds can be shipped across the continent and then win in the hottest competition than the fact that a California breeder this year sent a string of birds to Madison Square Garden, New York, and won three firsts, one second, one third, one fifth and a lot of special prizes after a journey of 3000 miles. If you put your birds in clean, comfortable coops and provide means for watering and feeding, it is possible to ship from any part of the United States or Canada and win at the Universal Poultry Show. It will pay even the smallest breeder to make a trial with at least a few of his birds. If he should win one ribbon, look what it would mean to him. The reward certainly justifies the effort.

All cars can be switched and unloaded and reloaded within a few feet of the poultry show buildings. This will save a lot of rough handling in express wagons. No previous exposition has ever had such accommodations or such good show rooms as is offered the poultrymen by this exposition.

California Should Profit Greatly

If the poultry breeders of California and the Pacific Coast do not cooperate and take advantage of the opportunity which they now have to show their birds and win at a World's Ex-

position, they will lose a chance which may not come to them again in a life time. This show should result in a poultry show being established upon the Pacific Coast that will mean to the people of the West the same that Madison Square Garden does to the poultrymen of the East. Even though you are a small breeder you should make an effort to exhibit a few birds.

The exposition itself is worth a four year's course in this country's greatest university or is equal in value to a trip around the world, if you study the exhibits, the peoples, and the nations represented. After giving these facts due consideration I hope the reader will be able to attend the show or will at least cooperate with this department in making this one of the greatest exhibitions of poultry that has ever been held anywhere in the world.

Rules and Prizes

Some changes have had to be made in the rules and regulations and you should familiarize yourself with them.

Birds will be received and cooped for exhibition on November 16 and 17. The exhibition period and time occupied in judging and reshipping the birds will be from November 18 to 28. The entries close on October 15 so all breeders should decide on the number of cocks, hens, cockerels, pullets and pens they wish to enter before that date. It is not necessary to decide on the exact individuals, but you should decide on the number and sex and select new bands to be put on them at the time of shipment. Send in your entry by or before October 15, 1915.

There is no limit to the number of birds any exhibitor may enter.

No entry fees will be charged for exhibits. A nominal fee of \$1.50 for each single specimen and \$4.00 for each pen will be charged to cover the expense of receiving, cooping, feeding, watering, exhibiting and returning the birds.

Exhibitors need not accompany their birds, but stock may be sent by express (charges prepaid) and the superintendent will see that they are given the very best of care and attention during the exhibition, and at the close returned to the owner or disposed of as he may direct.

Prizes

On all breeds and varieties of poultry recognized in the 1915 edition of the American Standard of Perfection and including Guineas and Pheasants, the following prizes will be awarded:

Cock, hen, cockerel, pullet, to each five prizes: First prize, \$5.00; second, \$4.00; third, \$3.00; fourth, highly commended; fifth, commended.

Breeding pen, to each five prizes: First prize, \$10; second, \$6.00; third, \$4.00; fourth, highly commended; fifth, commended.

In addition to the cash premiums, each prize will be designated by a beautiful silk ribbon from the Panama-Pacific International Exposition. These will carry more advertising value with them than any ribbon that can be won at any poultry show in America for years to come.

On pea fowl, one male and not less than four females: First prize, \$35.00; second, \$25.00; third, \$15.00; fourth, highly commended; fifth, commended.

Ostriches (one male and not less than four females): First prize, \$100.00; second, \$75.00; third, \$50.00; fourth, highly commended; fifth, commended.

A fee of \$7.50 will be charged for a display cage large enough to hold 10 or 12 birds which are intended only for display purposes.

Liberal premiums will be paid on all varieties of capons. Also prizes for the largest and best display of capons. There will probably be a demonstration in caponizing each day by some well known expert.

Write for Entry Blanks

For further information relative to

the Universal Poultry Show, the meeting of the American Poultry Association, or the meeting of Specialty Clubs, write to Mr. D. O. Lively, Chief of the Department of Live Stock, or to T. E. Quisenberry, Superintendent of Poultry, Panama-Pacific International Exposition, San Francisco, California.

TEMPERATURE AND HUMIDITY FOR EGG STORAGE

My eggs are coming out of my Cooper Brine System storage in first class condition. If anything I think my rooms are too dry. I have usually carried the temperature at the floor at 29 degrees Fahrenheit. Do you think that if I carried the temperature at the floor at 31 degrees Fahrenheit, which would make it about 31½ degrees Fahrenheit at the ceiling, that the humidity would be a little higher and reduce the shrinkage or evaporation of the eggs?

Do you think that eggs packed in tin cans with covers off would keep better than in cases, as this would avoid the straw board or filler flavor?

Some small experiments along this line with cracked eggs this year lead me to think that this suggestion might be worked out. Possibly the can might be perforated for a circulation of air. Eggs carried without straw board flavor would certainly find a ready market.

S. B. E.

Eggs are certainly better kept a little too dry than too moist, and, therefore, we would not recommend that you carry the temperature any higher than you have been carrying it. The higher the temperature the greater amount of moisture the air will contain and the greater the tendency to mold or "must." It is out of the question to avoid shrinkage or evaporation no matter how the humidity is carried, nor what temperature is maintained.

Experiments which have been conducted in keeping eggs in cans or other open receptacles in cold storage have not shown that this method is satisfactory, and we would recommend that you do some experimenting along this line, with a few cans only, to demonstrate the possibilities of the scheme to your own satisfaction before going into it on any large scale. It seems that it is necessary that eggs should be protected from a circulation of air by means of a porous material like straw-board or paper, and storing the eggs in a free circulation of air has not been found satisfactory. The so-called straw-board flavor, which you refer to, may be partially or wholly owing to a stale condition of the eggs or insipient "mustiness."

—Madison Cooper in Cold.

In wonder-workings, or some bush a flame,

Men look for God, and fancy Him concealed;

But in earth's common things He stands revealed,

While grass and flowers and stars spell out His name.—Minot J. Savage.

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Wanted—A man in every town to sell our Teas and Coffees. It's a chance to get into business without cost; if \$25.00 per week means anything to you, write now to G. B. Wheeler, 2326 E. 3d St., Los Angeles, Cal.

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Good Territory open for agents or fertilizer salesmen in California to handle Radio-active-earth (Radium residue) for mixing with fertilizers. A. M. Wells, 633 Van Nuys Building, Los Angeles, Calif.

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Hogs—Forty head of BIG TYPE POLAND CHINA boars of any age. Sired by IOWA WONDER, who is a son of A WONDER, the greatest hog living or dead. No females to sell at present. On account of large number on hand will make special prices. Geo. A. Smith, Corcoran, Cal.

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Poland Chinas—Young stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

Pedigreed Duroc Jersey Boars or sow pigs—Extra fine. John Kincaid, Box 161, East Bakersfield, Cal.

For Sale—Thoroughbred Duroc Jersey Boars and Gilts, strong and vigorous stock. Fred Hart, Exeter, Cal.

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For the half-year ending June 30, 1915, a dividend has been declared at the rate of four (4) per cent per annum on all deposits, payable on and after Thursday, July 1, 1915. Dividends not called for are added to the deposit account and earn dividends from July 1, 1915.

GEORGE TOURNY, Manager.

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FARM BUREAUS

(Continued from Page 40)

m., R. L. Herrell, leader. July 13, 2:00 p. m., farmers' meeting, schoolhouse. July 13, 4:00 p. m., W. J. Brabbin, leader.

Apache, July 14, 10 a. m., John Weber, leader.

Chiricahua, July 14, 2:00 p. m., farmers' meeting, schoolhouse, J. B. Pettit, leader.

Douglas, July 14, Dr. A. W. Vanne-

man. July 15, 10:00 a. m., Dr. Vanne-

man's farm, P. Adams, leader. Hereford, July 15, 7:30 p. m., farmers' meeting, Palominos, J. H. Hughes, leader. July 16, 10:00 a. m., boys' club, J. H. Hughes, leader. 1:30 p. m., Page's farm, W. J. Page. 3:00 p. m., Findlay's farm, John Findlay.

Garces, July 16, 7:30 p. m., farmers' meeting, schoolhouse, J. R. Johnson and J. G. McCabe, leaders. July 17, 8:00 a. m., 2:00 p. m., farm visits.

Buena, July 17, 2:30 p. m., farmers' meeting, schoolhouse, J. P. Steele, leader. July 19, 10:00 a. m. J. P. Steele's farm, J. P. Steele, leader.

At these group or field meetings definite methods of practices will be demonstrated and discussed. The main subjects to be discussed will be silos (especially pit silos), silage and silage crops, winter grains and grazing crops, and live stock. It is also requested that the program committees of the local associations prepare a program on these subjects and appoint a member for each subject: Silos, silage, crops, winter grains, winter grazing crops. These members should study farmers' bulletins, state experiment station literature, and farm papers on the subject, and make brief report on the same. It is also suggested that a committee on fairs and exhibits and a committee on county organization be appointed, and be prepared to report.



Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Abcess on Jaw

Cow affected with something like tonsillitis. One side of throat badly swollen. Did not eat or drink for three days. Rubbed with liniment which reduced the swelling. It however continues to look bad. What can I do? The animal was formerly affected in the same way.—Subscriber, National City.

It is probably an abcess that breaks on the inside. It may be due to a small foreign body that remains and heals over from time to time. Bathe with liniment and rub it hard. A good liniment to use on it may be made of equal parts of turpentine, spirits of camphor, oil origanum and aqua ammonia. When you think it has broken inside squeeze it hard to expel everything that may be in the cavity. The trouble might be due to tuberculosis. In any case it would be well to have her tested with tuberculin.

Abcess

My cow fresh the fourth time has large hard lumps just forward of udder. Small sores developed on udder. The large place has increased until it is now nearly 18 inches in diameter. It has not as yet decreased flow of milk. Cow seems to be in much pain.—Subscriber, Nestor.

A poultice of bran and hot vinegar might relieve it but if you are near a veterinarian you had better call him to see it.

Giving Milk Before Calving

I have a two-year-old (coming) heifer probably a month or six weeks from calving. Calves have been fooling with her and brought her to her milk. She is giving two quarts a day. Shall I dry her up or let her go on giving milk?—Subscriber, Owensmouth.

If the time was longer we would advise letting her go dry, but by the time you get this it will be so near her calving time that we would advise keeping up the flow of milk.

The Spokane Interstate Fair and Live Stock Show will be held on the Interstate Fair Grounds at Spokane September 13-18. Live stock classes have been much enlarged this year and many new premiums offered.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Red Spider

My grape vines set fruit but when it is the size of number eight shot the leaves all fall off. This occurred last year about this time, the middle of June, and note it is beginning this year. Sprayed the vines with lime sulphur spray. There seems to be no insect present though we have been told the trouble is caused by red spider.—Subscriber, Corning.

If our subscriber has been looking for red spider he has perhaps been looking for too large an insect. As a matter of fact the red spider is almost invisible and when his work becomes apparent the insect has finished his season's work and gone. A more general dosing with flowers of sulphur will perhaps prove beneficial. Personal inspection of the vines would enable one to give a more satisfactory answer.

Coccidiosis

I am raising Belgian hares which seem nice and healthy but recently killed two young ones (about three months old) and the livers were full of what seemed to be chunks of fat. Is it a disease making them unfit for food? I feed alfalfa and ground barley. Where could I send a sample of liver to have it examined?—Mrs. G. T. H., Orland

Your rabbits are affected with coccidiosis, making the livers unfit for food. If you supply them with dry alfalfa hay and ground barley, we can see no fault in your feeding.—R. V. M.

Pine Needles for Mulch

A subscriber has asked as to the use of pine needles for mulching about trees or shrubs. We believe there would be nothing objectionable and that they would make an excellent mulch.

Alfalfa in Apple Orchard

Would like information as to the advisability of planting alfalfa in my entire apple orchard, that is, covering all the ground, both under the trees and in the middles.—Subscriber, Yucaipa.

We will be glad to hear from our subscribers on this particular point. However, no one can give very definite information without knowing more of the particulars as to the character of the soil, the quantity of water and many other points. The matter of growing a mulch-forming material in our orchards is being discussed more generally than ever before, and many of our producers would consent to planting middles providing there is sufficient water, but if our subscriber has only sufficient water to carry the trees he must bear in mind that alfalfa will probably crowd them and he will get a most indifferent tree growth because of the fact that alfalfa requires great quantities of water. We presume that if alfalfa is grown the intention is to mow and allow the hay to lie on the ground as a mulch.

Flyless Homes

Make yourself not-in-the-way inexpensive no halting mosquitoes and fly trap from plans sent on receipt of 50 cents. Eliminates in-the-way traps, sticky and poison papers. Greatest catcher of flies and mosquitoes ever invented. Satisfaction guaranteed. Why not be our agent in your neighborhood. Send 50 cents now for full details to

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We keep a full line of supplies and are prepared to serve beekeepers promptly.

Write for Catalogue C
A. L. ROOT CO.,

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In this way the soil would be materially benefited.

Summer Pruning of Vines

Will the yield of Muscats be increased by cutting runners? If so when is the proper time for this operation?—Subscriber.

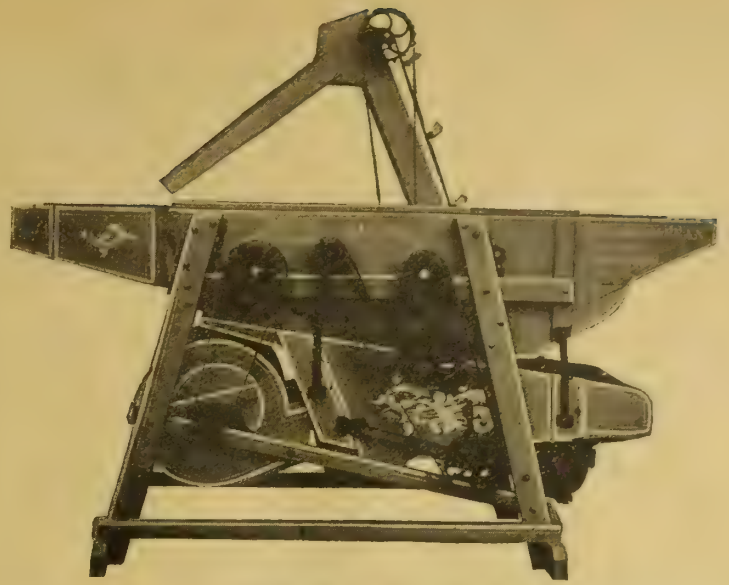
No, cutting the runners will not increase the yield other than providing more shade so as to prevent sunburn. It will not make more or larger bunches. It will retard the ripening of the grapes.—J. W. M.

SIXTH APPLE SHOW BEST EVER

Sebastopol has held five annual Gravenstein Apple Shows, beginning in 1910. Now in 1915 preparations are being made to hold the sixth on a much grander scale than heretofore. It may be said that the one now in course of preparation, under leadership of Secretary J. P. Kelly, of the Sebastopol Gravenstein Apple Show Association will eclipse them all in size, variety and general magnificence.

Sebastopol has proven itself a great producer of a magnificent early apple and it is fitting that it be crowned king at least once each year.

The Northern Pacific is sending out a berry train from the Inland Empire to the East.



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Perfect Separation

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Long Handle Spades, per dozen...\$3.75 or 40c each
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—All colors of shingle stain except gray that should be selling at 65c to 75c per gallon, now going at 50c per gallon, in five-gallon lots.

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TOILETS AT \$15.50

COMPLETE WITH VITREOUS CHINA BOWL AND TANK

—These toilets are perfect in every respect and fully guaranteed. Made by the famous Johnson Bros., Hanley Limited, England. Both bowl and tank are of vitreous china, and wood seat is fitted with finest post hinges. Other dealers would charge you at least \$20 for toilets like these. —Special steel enameled bath tub \$8.00. Other sizes \$8.50, \$9.00 and \$10.00.

Freezers 1/2 and Less

—Dana Ice Cream Freezers always command full price. Here they are at 1/2 and less. 2-quart size, reg. \$1.75, now...\$.75
3-quart size, reg. \$2.25, now...\$1.00
4-quart size, reg. \$2.50, now...\$1.25

\$2.25 House and Floor Paints, \$1.25 Gallon

—Secured by us at bankrupt sale; lot includes many famous brands. Good assortment of colors.

\$2.50 Varnish Remover, \$1.75 Gallon

—The famous Hi-Lo varnish remover, said by many to be the most practical of the many varnish removing preparations.

\$2.25 Wall Paints, \$1.25

—Made especially for use in kitchens, bathrooms, etc., as steam and heat do not affect them. Can be washed with soap and water without injury.

12c Wall Paper Paste, 10c Pound

—Dry wall paper paste, the kind that we sell to regular paper hangers. Other stores sell this regularly for 12c; our price, 10c pound.

FREE CATALOG OF BUILDING MATERIAL

WHITING-MEAD COMPANY

9th and Maple Avenue

LOS ANGELES

Whiting-Mead Company,
9th & Maple, Los Angeles
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Name.....
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Frozen Custard

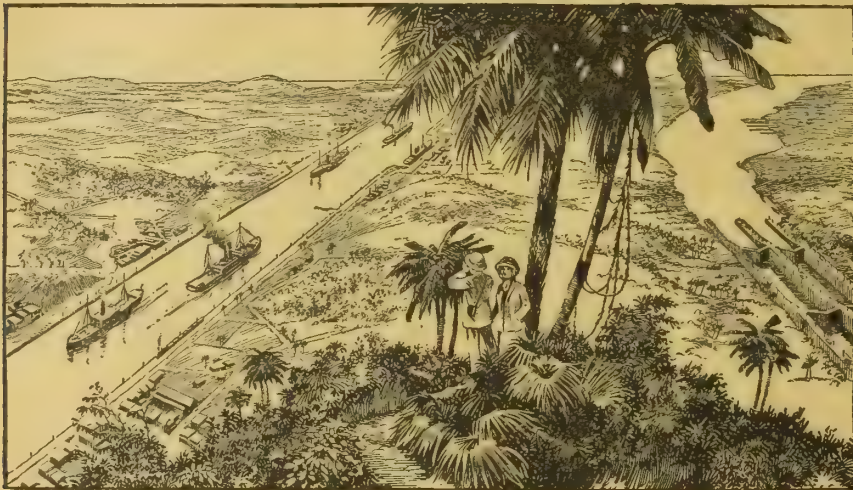
A Delicious Dessert
For Hot Weather

Nothing is more satisfying at the close of a meal these hot summer days than a nice cooling dessert. Try the following recipe for a delicious Frozen Custard, and you will make the whole family happy:

One quart rich milk; one handful raisins; one-half cup sugar; one-half cup Karo Syrup; three eggs; two teaspoons Kingsford's Cornstarch; one-half cup nut meats chopped; two teaspoons vanilla. Heat the raisins in the milk in a double boiler for twenty minutes. Make a custard of the other ingredients, adding the nut meats when cold. Freeze as ice cream. This may be varied by adding chopped figs, dates, etc.

Kingsford's Cornstarch is specified particularly in the above recipe because it is the brand always depended upon by housekeepers who have the best success with cornstarch recipes. It can be obtained at all modern grocers and costs no more than inferior brands.

In ordering, ask your grocer for a copy of the little Kingsford's Cook Book, which contains the above and hundreds of other recipes for dainty desserts, as well as a great deal of valuable information on culinary subjects.



The Price of Progress

THE Panama Canal stands as one of the most marvelous achievements of the age. Into its construction went not only the highest engineering skill, but the best business brains of the nation, backed by hundreds of millions of dollars.

Suppose conditions not to be foreseen made it necessary to replace the present canal with a new and larger waterway of the sea-level type, to be built in the next ten years.

Also suppose that this new canal would be the means of a great saving in time and money to the canal-using public, because of the rapid progress in canal engineering.

This sounds improbable; yet it illustrates exactly what has happened in the development of the telephone, and what certainly will happen again.



THE FRIEND

It's not that he's obligin',
Good lookin' or a saint:
Dear God (who made him out of mud)
Knows well that's what he ain't.

He never lent me money;
He never saved my life;
An' he don't like the brand I smoke,
An' I don't like his wife.

He's not so quick an' clever—
That is, not as a rule;
At times (the times we disagree)
He seems a sort of fool.

But still it somehow thrills me
To grip his hearty hand.
I guess the thing that makes us stick
Is that we understand.

I understand the varmint;
Sometimes he savvy's me,
And that's what makes a man your
pal
As far as I can see.
—Charlton Lawrence Edholm.

A CURE FOR INDECISION

"Eva," said Jack Severance, "I must return to the city tomorrow. I wish you to tell me before I go whether you

will marry me or not."

"Suppose I say 'not,'"

"Then I will not ask you again."

Eva winced.

"I believe," continued Jack, "in a woman taking plenty of time in making up her mind on such an important matter as marriage, but what's fair for one is fair for the other. It would be as unreasonable for the man to put off the wedding day indefinitely as for a girl to take an indefinite time to accept or decline him."

"If I accept you and we find what so many are finding nowadays, that marriage is in our case a failure, you will be the sufferer as well as I."

"Correct. And if we grow every day more devoted to each other you will be the gainer as well as I."

"In other words, it's a game of chance."

"If you think so, why not come to your decision by a game of chance? I will play you an odd number of games of euchre; if I win the most of them you marry me; if you win the most of them you don't."

"There would be no sense in that."

"Why not?"

"If I wanted you I would play badly; if not I would play my best. But it wouldn't be fair anyway, because you are a much better player than I."

"You might spin a coin. No one can tell on which side a coin will fall. Fate alone would decide in that case."

"But suppose fate should decide wrong?"

"If you know which alternative is wrong why resort to cards or coin spinning? Why not decide in the right yourself?"

"But I don't know which way is wrong."

There was silence for a few moments. She looked very unhappy. There is no greater source of mental discomfort than vacillation.

"I'm going to give you," he said, "till 9 o'clock tonight to decide. If you don't decide in my favor before the clock strikes 9 I shall wait no longer."

"What do you mean by that?"

"I shall withdraw the offer."

"You mean you'll never ask me again?"

"If you prefer that method of expressing it."

"You're very independent, aren't you?"

"I have reached a decisive point."

Jack bade her adieu and left her. He knew that he possessed her heart and that she would marry him, but she would never make up her mind to do so. He must make up her mind for her.

But how should he do this? He would have done it long ago if he could. He had thought of frightening her into it by some drastic measure, but in that case there was a possibility of her breaking with him altogether. He had finally concluded to set a limit of time for her answer, but he knew that the clock might strike 9 till the crack of doom and it would have no effect upon her.

But he was determined to get his answer and get it before leaving her again. They lived a thousand miles apart, and he could not be making journeys to go back after each with nothing decided. He had a simple plan in his head, and if he could get her to adopt it she would decide in his favor. The result would be accomplished by stratagem, but he considered that the end justified the means.

When he went back to her in the evening he had a new silver half dollar and a new quarter in his pocket. He called at half past 8. He skirmished for a quarter of an hour, when he drew forth a half dollar and said:

"Are you willing to leave this matter between us to Fate for decision?"

"Yes, I am. I'm tired of trying to decide it myself."

"Very well. I will spin this coin, or you can spin it yourself if you like. You may choose heads or tails. If you win, I losing, you refuse me; if I win you accept me. The best in five spins decides."

"You may spin the coin and choose heads or tails."

"Very well. He spun the coin, called 'heads' and won. He spun it again, calling 'heads,' and won again.

"I believe it's loaded," she said.

"If you think so I will try another coin for the balance of the trial." And he brought out the quarter. He spun it, crying "tails" as he did so. She watched it with bated breath till it fell "tails" up. He took her unresisting in his arms.

She looked up at him with a great relief. He had broken or Fate had broken through her indecision, and now that the barrier had been passed she was very happy. She cared not how she had been dragged over it so long as it was behind her.

After they were married she found in her husband's box, where he kept scarfpins, watch chains and such odds and ends, a half dollar and a quarter. She asked him if they were mementos. He said they certainly were mementos, since they had made him happy in giving him her. He spun them, the half dollar invariably falling heads up, the quarter tails up. Then with a microscope he showed her that the milling of the larger coin had been filed on the tail's side and the quarter on the head's side.—Denver Field and Farm.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Iced Currants

Eggs in Batter Creamed Potatoes
Queen of Muffins Honey
Coffee

Lunch or Supper

Tuna with French Dressing
Macedoine Vegetables Cottage Cheese
Berry Rolls Tea or Milk

Dinner

Baked Ham, Browned Potatoes
Stuffed Summer Squash
Cantaloupe Salad
Warm Blackberry Pie
Coffee

Eggs in Batter (Individual Service)

One egg, one and a half tablespoons thick cream, two tablespoons fine stale bread crumbs, one-quarter teaspoon salt. Mix cream, bread crumbs and salt. Put one-half tablespoon of mixture in egg-shirrer. Slip in egg and cover with remaining mixture. Bake six minutes in moderate oven.

Queen of Muffins

One-quarter cup butter, one-third cup sugar, one egg, one-half cup milk (scant), one and a half cups flour, two and a half teaspoons baking powder. Cream the butter, add sugar and egg well beaten; sift baking powder with flour and add to the first mixture, alternating with milk. Bake in buttered tin gem pans 25 minutes.

Macedoine Vegetables

Melt three tablespoons of butter, add three tablespoons of flour and gradually one and a half cups of milk. When thickened add one cupful each cooked string beans, peas and cold boiled potatoes, cut in cubes. Season with salt and paprika and let stand 15 minutes over hot water before serving. As this calls for other vegetables it may help to use up the leftovers.

Baked Berry Rolls

Roll biscuit dough thin in the form of small squares, spread over berries, roll up, put rolls in dripping pan, close together until full, then put into the pan a very little water, sugar and pieces of butter; bake one-half hour in moderate oven. Serve with pudding sauce.

Cantaloupe Salad

Cut well chilled cantaloupes in halves lengthwise, take out the seeds and remove the pulp in nice even pieces, sprinkle them with salt and paprika and an equal quantity of crisp lettuce cut in strips and dress with a good boiled salad dressing. Place the shells of the cantaloupes on salad plates, garnish with the large leaves of lettuce and fill them with the cantaloupe and lettuce mixture. Serve at once while cool and crisp.

I like the new version best: "If at first you don't succeed, find out the reason and then try again."



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HOUSEHOLD QUERIES

Curing Rose Petals

In the Cultivator of June 10 some one asks how to cure rose petals. I have found by experience that they retain their perfume better if dried in the shade than in full sunlight. If space indoors is scarce place the fresh petals on a paper (not too thick) and slide under the dresser, couch or any stationary piece of furniture. Stir once a day until dry.—Mrs. H. M. McCall, Imperial.

PROTECTION AGAINST CLOTHES MOTHS

The various substances used to keep away moths, such as tobacco, camphor, naphthalene cones or balls, tarred paper, and cedar chips have no effect if the eggs are already present in the clothes, and entomology specialists in the United States department of agriculture therefore recommend a thorough beating, shaking, and brushing of all articles likely to attract moths, before they are laid away for the summer. The brushing of garments is especially important in order to remove eggs which may have escaped notice. If the articles are quite free from eggs or larvae when laid away, the odor from the various repellents already mentioned or from cedar chests and wardrobes will serve to keep the moths away. This odor, however, lessens with age, so that the protection it affords is greatly decreased

PRESERVING HINTS

Timely Information for Women
Who Do Their Own Preserving

Experiments conducted by both English and American manufacturers of high grade preserves, jams and jellies, have demonstrated that the most satisfactory product can be produced if part corn syrup is substituted for all sugar. The corn syrup being less sweet, more of the natural flavor of the fruit is retained, and it is only necessary to use sufficient sugar to make the product sufficiently sweet to please the individual taste of the consumer. This is particularly true in canning pears and other fruits having a delicate flavor. Most housewives desire a thick, heavy syrup; and, in order to obtain this, so much sugar is used that the canned or preserved pears have a cloying sweetness. This is also true of peaches, raspberries and many of the other more delicately flavored fruits.

But in order to obtain the best results, it naturally follows that the best quality of corn syrup be used. Housekeepers everywhere have found the brand of syrup known as Karo (Crystal White) most satisfactory for this purpose. Too much cannot be said in favor of the use of Karo in the making of jams and jellies, especially from such fruits as grapes, where the natural sugar of the fruits is inclined to crystallize. The use of Karo Syrup (Crystal White) with sugar will absolutely prevent crystallization.

Ants Cannot Exist

Where The Following Simple
Method Of Extermination
Is Pursued

Ants are persevering insects. They persist in living long after you think you have put the quietus on them forever. A cat may have nine lives, but he has got nothing on an ant in this respect.

Many remedies have been tried on ants without result, but one has at last been discovered which will absolutely put them out of business. A baker and candy-maker in Los Angeles, driven to distraction by this pest, prepared a paste which drove every ant out of his shop in one day. Ants cannot exist where this remedy is used. Thousands of testimonials from all over the country bear witness to its efficacy.

It is put up for general use under the name of Kellogg's Ant Paste, and can be obtained at all good druggists. Try a package today and end your ant troubles for all time.

after a few years. For this reason when furs and other valuable garments are wrapped in tarred paper or placed in sacks of tarred paper these containers should be removed every year or two.

In general moths are likely to affect only articles which are put away and left undisturbed for some little time. Apartments and closets that are frequently aired and swept are not apt to be seriously affected. In fact airing and sunlight are probably the best as well as the oldest remedies. Where circumstances demand that the articles be put away, however, a convenient and effective device is to place them in large paste-board boxes such as tailors use and gum a strip of wrapping paper around the edge so as to seal up the box completely and leave no cracks. If the garments have been thoroughly cleaned before being placed in these boxes, no additional protection is necessary and there is none of the objectionable odor which is characteristic of so many repellents.

For valuable articles the safest plan is to place them in cold storage. Recent experiments have shown that the larvae of the clothes moth will resist for a long time low temperatures if these are uniform, but that the alternation of low and high temperatures quickly results in death. It is recommended therefore that storage companies submit their goods to two or three changes, varying the temperature from about 18 degrees Fahrenheit to 40 or 50 degrees Fahrenheit. After this preliminary treatment, they should be kept permanently at about 40 degrees Fahrenheit. Any lower temperature is a needless expense.

SAUCES FOR FISH

Some people think that frying is the only way in which a fish can be cooked. Many who have lived all their lives on the shores of the greatest fishing region in the United States have never discovered how delicious a Mackinac trout or whitefish is, when stuffed and baked, or boiled and served whole. Large fish make wonderfully good "cutlets," when boned, cut across in slices, tied to preserve their circular shape, buttered and baked in the oven to a golden brown. Cut the fish across in inch-thick slices, removing bones. (The fish peddler will do this for a few cents extra, and it is well worth the money.) Salt and pepper the slices, flour them and lay them separately in pieces of rather thin white cloth well floured. Tie cloth around, so the fish will retain its shape, and boil for about half an hour in water in which has been put a piece of bay leaf, two or three cloves and a slice of lemon. Remove from cloth on a hot platter, and cover with any favorite sauce for fish.

There are several good fish sauces which add greatly to the taste as well as looks of a fish dinner.

Drawn Butter—Rub together one cup of butter and small tablespoon of flour; pour upon it one scant cup of boiling water and let it boil up once. Parsley cut fine can be added, if liked.

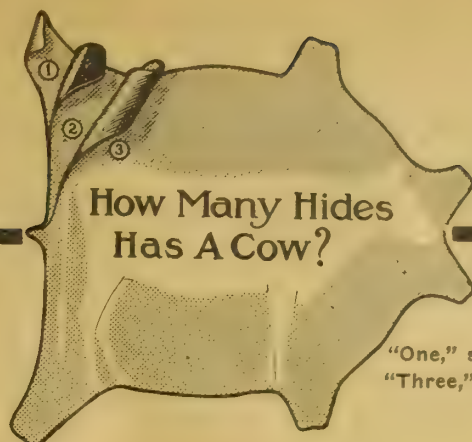
Egg sauce—Make drawn butter and pour it over two eggs boiled hard and cut fine.

Cream Sauce—One pint of cream, heated to the boiling point; stir into it a tablespoon of butter, a little salt and a half cup of the water in which the fish was boiled. If it does not thicken, rub smooth a teaspoon of arrow-root and add to the sauce.

Oyster Sauce—One pint of oysters, one-half a lemon, two tablespoons butter rolled in flour, one teacup milk, pepper and salt to taste. Heat the oysters, cut in pieces, if large; when boiling hot, skim, and add the flour and butter with the other seasoning; have the milk heated in another dish; and add that and the lemon juice, when taken from the fire.

Piquant Sauce—One cup of meat-liquor; heat to boiling, skim and season with salt and pepper. Brown two tablespoons of butter in a sauce-pan with one of flour; pour the meat-liquor into the pan and add a teaspoon of made mustard, a little onion juice, a large spoon of vinegar and some parsley.

Horseradish Sauce—To three tablespoons of grated horseradish, add one tablespoon of vinegar, one-fourth teaspoon of salt, pepper to taste, and one-fourth of a cup of cream. Mix the first four ingredients and add the cream, which has been beaten to a stiff froth.



"One," says Nature
"Three," says Cunning

Because demand far exceeds supply, man craftily splits each cowhide into several sheets. But—there can be only one sheet of grain leather. The rest are merely "splits"—coated and grained to look like the genuine article, and sold as "genuine leather," but they do not wear like hand or machine buffed leather. Right here enters

The Ideal
Upholstery
Material

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FABRIKOID**

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Superior to
Coated Splits

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Fabrikoid looks and feels like the best leather. It is water, dust and grease proof—guaranteed for one year against cracking or peeling. And back of this guarantee is the century old Du Pont reputation for integrity of purpose, superiority of product and financial responsibility.

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Craftsman Quality Fabrikoid for furniture upholstery and home-made furnishings is beautiful and wears better than most leathers. Sold by the yard by leading upholstery dealers and department stores in all popular colors, grains and finishes.

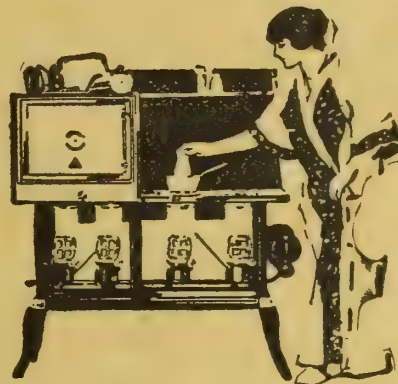
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Oil Cook-Stove

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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, July 7, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:

Creamery Extras	26
Firsts	24
Country	22@23
Ladle	20@21

CHEESE

Prices to trade, 1 to 2 cents higher:	
California Fresh	13½
Cheddar	20@21
Domestic Swiss	20
Eastern Daisy	19
Oregon Triplets	15½@16
Eastern Twins	16½@17
Longhorn	19@19½
Imported Swiss	30@32
Tillamook	16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts	25
Candled	27
Petaluma—Santa Rosa	27
Northern Case Counts	25
Other Outside Stock	23

Prices to producers:

Hens, lb.	11@15
Roosters, old	9
Broilers, lb.	17
Fryers	17
Roasters, lb.	17
Turkeys	14@16
Ducks	11
Geese	11
Squabs, doz.	1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	8.00
Prime Steers	7¼@7½
Heifers	6¼@6½
Calves, lb.	8½@9
Sheep—	
Ewes, head	4.50
Wethers	5.00
Lambs, head	4.75@5.00

POTATOES

Wholesale selling prices:	
Idaho Russet	2.40
Idaho Rurals	1.60
New, cwt.	95@1.00
Sweets, yellow	6½@7
Northern Burbanks	1.60

ONIONS

Wholesale selling price:	
Bermudas, Imperial Val., cr.	1.15@1.25
Crystall Wax, crate	1.00
Garlic	1.10@1.11

VEGETABLES

Wholesale selling price:	
Asparagus, green, lb.	10
Artichokes, Northern, doz.	1.00@1.10
Beets, doz.	30
Beans—	
Wax	5
Limas	10
Green	4@4½
Cabbage, sack	30
Carrots, doz.	30
Cauliflower, doz.	1.50
Celery, doz.	40-80
Chicory	40
Chives, doz.	1.25
Corn, lug	45@50
Cucumbers, box	40-45
Egg Plant, lb.	5½@6
Escarole, doz.	40
Horseradish, lb.	10
Leeks, doz.	40
Lettuce, doz.	25
Mint, doz.	40
Okra, lb.	12½
Onions, Green, bunch	20
Oyster Plant, doz.	40
Parsnips, doz.	40
Parsley, doz.	15
Peas, Telephone	6@6½
Peppers—	
Chili Green	20
Bells	16
Radishes, doz.	15
Rhubarb—	
Crimson Winter, box	75
Strawberry	90@1.00
Spinach, doz.	15
Squash—	
Crookneck, box	45
Summer, lug	30@35
Tomatoes, crate	1.00
Turnips	30

FRESH FRUIT

Wholesale selling price:	
Apples—	
New Spring Crop, lug	96
White Astrachan, box	2.00
Red Astrachan, lug	75
Apricots, lug	50@60
Avocados, doz.	4.50
Bananas	3½@4
Berries—	
Strawberries, basket	3@6
Blackberries, basket	2½@3
Raspberries, tray	60
Loganberries, tray	50
Cantaloupes—	
Diamond Pack	1.35@1.40
Standard	1.65
Jumbos	1.75
Cherries—	
Royal Ann, lb.	9@10
Black, lb.	11@12½

Cherimoyas, lb.	20@25
Currants, crate	90@1.00
Figs—	
Calimyrna	1.25
Black, box	60@1.25
White, box	60@1.15
Grapes, lb.	7½@8
Peaches—	
Clings, lug	1.35
Freestones, lug	1.10
Plums—	
Climax, lug	1.25
Sonomas, lug	1.25
Formosa, lug	1.25
Satsuma, lug	1.50
Burbank, lug	90
Tragedy	1.35@1.40
Pineapples, lb.	5@7
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:	
Lemons	1.50@2.25
Grapefruit, Seedless	2.25@2.75
Limes, basket	1.00
Valencias	2.00@3.00
Sunkist	3.50

DRIED FRUITS

Wholesale prices to retailers are:	
Evaporated Apples, Fancy, lb.	8@8½
Boxes	10@16
Apricots	12½
Nectarines	5½@7
Peaches	8@13½
Prunes	7½@13

NUTS

Prices named by California Walnut Growers' Association are:	
No. 1	16½
Budded Walnuts	20
Jumbos, lb.	19
No. 2	12
Culls	9
Peanuts—	
California, Raw	6
Japan	5½
Eastern	7½
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:	
Comb, Fancy, Water White	15@16
White	14@15
Light Amber	12½
Extr. Water White	7@7½
White	6@6½
Light Amber	5
Beeswax	24@25

RICE

Wholesale selling price:	
California	4.25@4.75
Broken	2.75@4.25

BEANS

Wholesale selling price:	
Producer's price not far from one dollar under these quotations:	
Limas	5.35
Bayous	6.00@7.00
Lady Washington	5.75
Pinks	4.65
Black Eyes	6.75@7.00
Lentils	14.00
Small White	5.50@5.75
Garbanzos	8.50

HAY

Prices to producer f. o. b. Los Angeles:	
Following prices are on new hay.	
Barley Hay	8.00@9.00
Wheat Hay	8.00@11.00
Tame Oat	9.00@12.00
Alfalfa	8.00@11.00
Volunteer	5.00@7.00
Straw	5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:	
Corn, Yellow	2.15
Corn, White	2.25
Wheat	2.00@2.05
Oats, White	2.00@2.05
Oats, Hulled	2.25
Egyptian Corn	2.20
Barley Seed	1.35
Barley, Hulled	1.70
Kafir	2.05
Milo	1.85
Sunflower Seed	7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:	
Bran, Heavy	1.90
Alfalfa Meal	1.15

WEATHER CONDITIONS

For Week Ending July 3, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Stations	Past Week	Seasonal to Date*	Normal to Date*
Eureka	.00	.00	.02
Red Bluff	.00	.00	.00
Sacramento	.00	.00	.00
San Francisco	.00	.00	.00
San Jose	.00	.00	.00
Fresno	.00	.00	.00
Independence	.00	.00	.00
San Luis Obispo	.00	.00	.00
Los Angeles	.00	.00	.00
San Diego	.00	.00	.00

*Since July 1.

Temperature Data

—Past Week—	Maxi-mum	Mini-mum
Eureka	62	48
Red Bluff	100	62
Sacramento	96	50
San Francisco	66	50
San Jose	90	48
Fresno	102	58
Independence	94	..
San Luis Obispo	80	48
Los Angeles	80	56
San Diego	74	58

Alfalfa Molasses, per cwt.	1.20
Beef Scraps	3.00@3.10
Beet Pulp	1.20
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.80
Bone Meal	2.05
Meat Meal	3.10
Bone, Green	1.75
Charcoal	2.00
Oil Cake Meal	2.60
Fish Meal	3.25
Rolled Oats	1.95
Middlings	2.20
Rolled Barley	1.30
Feed Meal	2.25
Scratch Feed	2.20@2.40
Oyster Shell	1.25

San Francisco Market

SAN FRANCISCO, July 6, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:	
Extras	26½
Firsts	25

CHEESE

Wholesaler to retailer.	
Oregon Y. Am.	12½
Young America	12½
California Flats	8@11
Cheddar	20
Oregon Twins	13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:	
Extras	25
Firsts	21
Select Pullets	20½

Price to producer:

Hens, lb.	13½@15
Fryers	20@22
Broilers	18@21
Roosters—	
Young	23@24
Old	10@11
Squabs	1.75@2.25
Ducks	12½@13
Geese	2.50@3.00
Belgian Hares, lb.	6@7

LIVE STOCK

San Francisco prices, gross weight:	
Steers	4@6½
Cows and Heifers	3@5½
Calves, lb., live weight	6@9
Hogs	4½@7¼
Wethers	8@8½
Ewes	5½@6
Milk Lambs, lb.	8@8½
Shorn stock ¼@1c less	

POTATOES

Wholesale selling price:	
Idaho	1.50@1.75
Idaho Russet	1.50@1.75
Burbanks	1.25@1.50
Oregon	2.00@2.25
Delta	70@90
New Potatoes	85@1.15

ONIONS

Wholesale selling price:	
Onions, cwt.	50@75
Bermudas	1.00@1.15
Australian Browns	1.50@1.75
White, crate	75@1.00
Oregon	90@1.00
Garlic, new	5@7

VEGETABLES

Wholesale selling price:	
Asparagus, box	1.00@1.25
Canner's Price	1.00
Beans—	
String	1½@3½
Wax	1@2½
Celery, crate	50@1.25
Corn, Brentwood, sack	1.75@2.25
Winters, sack	75@1.25
Fresno	75@1.00
Cucumbers—	
Southern, lug	60@70
Northern, lug	75@90
Eggplant, lb.	4@7

Lettuce, crate	75@1.00
Okra, crate	75@1.25
Peas, sack	1.00@2.25
Peppers—	
Bell, lb.	10@12½
Chili, Mexican	10@12½
Rhubarb—	
Alameda	40@60
Squash, Summer, lug	30@50
Tomatoes—	
Imperial Valley, crate	50@85
Merced	40@50

FRESH FRUIT

Wholesale selling price:	
Apples—	
Red Astrachan	1.00@1.50
Gravenstein	1.50@1.75
Other varieties	40@75
Apricots, crate	50@60
Canner's price, ton	15.00@17.00
Bananas, Hawaiian, bunch	1.50@2.50
Blackberries, chest	3.50@4.50
Cantaloupes—	
Ponies	75@1.00
Standard, crate	1.25@1.75
Special	50@60
Jumbos	1.75@2.00

Cherries—	
Blacks, lb.	4@8
Royal Ann	5@7
Ordinary	2@4
Currents, chest	2.50@5.00
Figs, box, single layer	30@35
Grapes, crate	1.00@1.25
Gooseberries, lb.	5@7
Loganberries, chest	2.00@3.50
Peaches, crate	55@85
Pears, Bartlett, box	90@1.00
Pineapples, doz.	1.50@2.50
Plums—	
Clyman	60@75
Climax	60@75
Satsuma	90@1.00
Tragedy	75@1.00
Raspberries, chest	5.00@8.00
Strawberries, chest	3.00@5.50
Watermelons, lb.	½@1½

CITRUS FRUIT

Wholesale selling price:	
Grapefruit, seedless, new crop	2.00@3.00
Lemons	1.75@3.50
Lemonettes	1.00@1.75
Limes, Mexican, case	4.00@5.00
Tangerines, halves	75@1.75
Valencias	3.00@3.50

DRIED FRUITS

Wholesale Prices are:	
Prunes—Bulk basis, 1914 crop almost cleaned up; 30-40s, 5½c; all other sizes, 5c; 1915 crop, Santa Claras, 30-40s, 4½c; 40-50s, 3½c; all other sizes, 3¼c. Outside sections ¾c lower.	
Other Fruits—	
50-lb. boxes—	Stan. Ch. Ex. Ch. Fey.
Evaporated apples	5½c 5½c 6½c
Apricots	6 c 7¼c 7¼c 9 c
Peaches	3 c 3¼c 3¼c 4½c
Pears	7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b.

HAY

Under date of July 3, Scott, Magner & Miller say:
We report total arrivals of hay on the San Francisco market during the week ending today at 4350 tons. On account of export activities during the last few months large quantities of hay have been turned, relieving the situation so that the new crop may come in on a better basis. Harvesting is going on very satisfactorily and the quality of wheat and red oat looks most attractive. The feeling among producers appears to be firmer on choice lots, although we do not believe that there has been much trading done during the week.

Most of the arrivals are of old crop, very little of the new grain hay being ready for shipment. There appears to be quite a volume of volunteer hay but of such character that it is expected to be slow in moving under prevailing conditions. Alfalfa hay has been coming in in moderate quantities with the market set and fairly well maintained. Fancy Wheat Hay (11. bales).....13.00@14.00

No. 1 Wheat or Wheat and Oat.....10.50@11.50
No. 2 Wheat or Wheat and Oat.....8.00@9.00
Choice Tame Oat.....11.00@11.50
Other Tame Oat.....7.50@10.00
Barley.....5.00@8.00
Wild Oat.....6.00@8.00
Alfalfa.....6.00@9.00
Stock Hay.....4.50@5.00
Straw......40@45

GRAIN

Alfalfa Seed.....16 1/2
Wheat, Cal. Club.....1.70@1.77 1/2
Barley Feed.....1.02 1/2@1.06 1/2
Barley Feed.....1.02 1/2@1.07 1/2
Barley, Old Crop Feed.....1.02 1/2@1.05
Oats, Red, Feed.....1.25@1.35
Oats, White, Feed.....1.40@1.45
Millet.....2 1/2@2 3/4
Flaxseed.....5@5 1/2
Rye.....2.00@2.25
Sunflower.....5@5 1/2

FEED STUFF

Wholesale prices:
Alfalfa Meal, car lots.....16.00@17.00
Bran, ton.....28.00@29.50
Feed Cornmeal.....40.00@41.00
Cracked Corn.....40.00@41.00
Rolled Barley, ton.....22.50@23.50
Rolled Oats, ton.....37.00@37.50
Middlings.....32.00@34.00
Shorts.....29.50@30.50
Oilcake Meal.....38.00@39.50
Cocoanut Oilcake Meal.....24.00@25.00

Citrus Fruit Market

Los Angeles, July 7, 1915.

Orange prices remain very much as they have been for the past two or three weeks. Owing to larger receipts in most Eastern markets of midsummer fruits there is a slightly easier feeling. Present prices are running far above those of former years at this time with similar quantity of fruit shipped.

We have remarked before the lemon market could not be worse. The condition is getting "no better fast." It would require a month of good hot weather to clear the situation.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 29,199 cars, lemons 4827, total 34,026. To same date last season, oranges 31,292, lemons 2218, total 33,510. From Tulare County, oranges 5648, lemons 198, total 5846. To same date last season, oranges 5867, lemons 30, total 5897. From Northern California 630, lemons 2. To same date last season, oranges 404, lemons 5.

NEW YORK, July 6.—Nineteen cars Valencia, two navel, one St. Michael and six cars lemons sold. Market strong and slightly higher, 216s and larger; easier, 250s and smaller. Lemons, unchanged. Fair.

VALENCIAS—Avg.
Royal.....\$2.95
Valley.....2.75
Old Mission, xf., Chapman.....4.45
Queen Louise, xf., L. V. Ranch.....4.10
Queen Louise, fy., L. V. Ranch.....3.75
Queen Louise, ch., L. V. Ranch.....3.55

NAVELS—
Begonia, S. A. Ex.....2.25
Pepperleaf, Riverside Ex.....2.40

ST. MICHAELS—
Golden Orange.....3.55
Palm Tree.....3.25

VALENCIAS—HALVES—
Red Riding Hood.....1.75

ST. MICHAELS—
Golden Orange-Red Riding Hood.. 1.60
Palm Tree.....1.45

LEMONS—
La Habra.....1.80
Reliable—Canyon.....1.20
Trail.....1.55
Pet.....2.00
Lake......90
Club.....1.20
Questa......90

PHILADELPHIA, July 6.—Nine cars sold. Market is steady Valencia, easy lemons.

VALENCIAS—Avg.
Buena Vista.....\$3.50
Ticktock, O. R. Ex.....3.55
Cowboy, O. R. Ex.....3.15
Ticktock, O. R. Ex.....3.25
Troy, O. R. Ex.....4.70
Jasmine, D. M. Ex.....3.35

LEMONS—

Canyon, A. C. G. Ex......65
Green Hussar, O. K. Ex......80
Pup.....1.05

BOSTON, July 6.—Twenty-three cars sold. Market is unchanged on Valencia, easy lemons.

VALENCIAS—Avg.
Etiwanda Gloria.....\$3.85
Green Banner, Sutherland F. Co.....3.60
Green Banner, Sutherland F. Co.....3.55
Native, Sutherland F. Co.....3.45
Reyato, Growers F. Co.....3.35
Plymouth, S. T. Ex.....3.30
Tunnel S. T. Ex.....3.30
El Dorado, E. F. G.....2.90
Belt, R. H. Ex.....3.10
Quail, O. K. Ex.....3.60
Blue Banner, Sutherland F. Co.....3.70
Pico, S. T. Ex.....3.30
Boston, S. T. Ex.....3.65
Rey, S. T. Ex.....3.55
Liberty, E. F. G.....3.50
Gold Buckle, R. H. Ex.....3.75
Glendora Home, A. C. G. Ex.....3.75

LEMONS—

Etiwanda Gloria.....1.20
California, W. C......85
Hawk......80
Pet.....2.50
Greyhound.....1.85
Whittier.....2.20
Greenleaf......95

SWEETS—

Rialto.....3.05
Redskin.....2.90

NAVELS—

Plain.....2.40
Carro Amano.....1.80

GRAPEFRUIT—

El Dorado.....2.30
Liberty.....2.35
El Dorado Seedling.....1.65

PITTSBURGH, July 6.—Five cars sold. Market is unchanged.

VALENCIAS—Avg.
Pico, S. T. Ex.....\$3.30
Violet, D. M. Ex.....3.55

LEMONS—

Crackshot......70
Deloro......60

NAVELS—

Blue U.....1.80

CHICAGO, July 6.—Heavy advance orders for fruits for the three day holiday practically cleaned up the market but big consignments of fresh stock came in today. Oranges are in moderate supply and steady. Boxes, California Valencia, 3.75@4.00. Lemons, boxes, California, 2.50@3.25; Messina, 2.00@3.00. Cherries: California, 10 pound boxes, 1.15@1.25; Oregon, cases, 24 pints, 1.80@2.00; Idaho, white, 1.00@1.25; Lamberts, 2.25@2.50; boxes, 19 pounds Bings, 1.80@2.00. Peaches: Alexanders, 60@70; Oklahoma, cases, 6 baskets, Carman's, 1.50@1.75. Apricots: Cases four baskets, 85@1.00. Plums: Tragedy, 1.60@1.85; Simoni, 80@90; Burbanks, 80@1.00; Climax, 75@1.00; Clyman, 65@75. Currants: Pacific Coast, red, cases 24 pints, 1.00. Loganberries, cases, 24 one pound boxes, 1.00@1.25. Cantaloupes: Standard crates, 1.75@2.00; flat crates, 75@90. Pineapples: Crates, 1.90@2.25.

KEEP SUGAR BEETS

(Continued from Page 29)

sugar company's instructions for one or two weeks.

The farmer who, whether or not from choice, accepts the flat rate, sustains an actual money loss corresponding to the shrinkage in tonnage through evaporation. He is paid according to the net weight of his beets at the time they are weighed on the factory scales. Let us say that a good beet grower obtains a yield of 20 tons an acre and agrees to accept a flat rate of \$5 a ton. This equals \$100, gross receipts, an acre. Experiments have shown that an average daily shrinkage of about 6.5 per cent may occur when handling the beets in the ordinary manner. Beets are often left several days in the field after they have been dug. This means a loss of \$6.50 a day per acre.

When the farmer has no alternative but to accept a flat rate, he may retard the evaporation of his beets by leaving them in large piles covered with the beet tops, as previously described.

CANNING VEGETABLES

(Continued from Page 34)

Green peppers are canned very well by the cold water method.

Select the green peppers, cut off the stem end and remove seeds. Parboil peppers for about 15 minutes or until the peppers are tender. They should not be cooked long enough to cause them to lose their shape. Pack them in jars, pour cold water over the peppers and seal. They are ready for use any time during the winter. These peppers may be filled with cold slaw, left over meats or other suitable fillings.

If care is taken in cooking the vegetables a sufficient length of time and if the vegetables selected are fresh the trouble in canning vegetables will be overcome.—Maryetta Wilson, Colorado Agricultural College, Fort Collins.

Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman.....	\$ 1.50	\$ 2.25	3
American Peach Orchard, by Waugh.....	1.00	1.85	2
Arid Agriculture, by Buffum.....	1.50	2.35	3
Book of Alfalfa, by Coburn.....	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey.....	1.50	2.20	3
Cement Worker's Handbook.....	.50	1.30	1
Citrus Fruits, by Coit (new).....	2.00	2.75	4
Cooperation in Agriculture, by Powell.....	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller.....	1.50	2.30	3
Date Growing, by Popenoe.....	2.16	2.85	4
Feeds and Feeding, by Henry.....	2.25	3.00	5
Farm and Garden Rule Book, by Bailey.....	2.17	2.90	4
Farm Animals, Hunt and Burkett.....	1.50	2.35	3
Farm Sewage, by Santee.....	.50	1.40	1
Field Manual for Sugar Beet Growers, Adams.....	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock.....	1.50	2.40	3
Farm Manures, by Thorne.....	1.50	2.25	3
Farm Friends and Farm Foes.....	.90	1.85	2
Farmers of Forty Centuries, by King.....	2.15	2.95	4
Fertilizers, by Vorhees.....	1.25	2.15	3
Fertilizers and Crops, by Van Slyke.....	2.50	3.35	5
Fertilizers, Source, Purchase and Use, by Smith.....	1.00	1.90	2
Fungous Diseases of Plants, by Duggar.....	2.40	3.25	5
Garden Helps, by Hall.....	.75	1.65	2
Gasoline Engine on the Farm, by Putnam.....	2.00	2.60	4
Gardening in California, Landscape and Flower by McLaren.....	3.75	4.50	7
Garden Book of California (Ornamental), by Angier.....	2.00	2.85	4
How to Keep Farm Accounts.....	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll.....	1.50	2.30	3
Harpers Gasoline Engine Book.....	1.00	1.80	2
Irrigation and Drainage, by King.....	1.50	2.40	3
Intensive Farming.....	.75	1.60	2
Insecticides, Fungicides and Weed-killers by Bourcart.....	4.50	5.00	9
Insect Pests of Farm, Garden and Orchard, by Sanderson.....	3.00	3.85	6
Lessons in Cooking Thro Preparation of Meals.....	2.00	2.85	4
Modern Gasoline Automobile, by Page.....	2.50	3.10	5
Making the Farm Pay, by Bowsfield.....	1.15	1.95	2
Management and Feeding of Sheep.....	2.00	2.75	4
Marketing and Farm Credits.....	1.00	1.50	2
Milk and Its Products, by Wing.....	1.50	2.40	3
Nursery Book, by Bailey.....	1.50	2.40	3
Principles of Breeding, by Davenport.....	3.00	3.75	6
Practical Garden Book, by Bailey and Hunn.....	1.00	1.90	2
Productive Feeding of Farm Animals, by Woll (new).....	1.50	2.35	3
Primer of Irrigation, Anderson (paper cover).....	1.00	1.85	2
Potato Book, by Grubb.....	2.20	2.70	4
Pruning Book, by Bailey.....	1.50	2.40	3
Play and Recreation, by Curtis.....	1.25	2.05	3
Rural Improvement, by Waugh.....	1.25	2.05	3
Standard Encyclopedia of Horticulture, by Bailey (new) 6 volumes.....	36.00	36.50	72
Story of the Soil, by Hopkins.....	1.50	2.35	3
Soil Mangement, by King.....	1.50	2.35	3
Soils, by Hilgard.....	4.00	4.75	8
Swine in America, by Coburn.....	2.50	3.25	5
Science and Practice of Cheese Making.....	1.75	2.50	4
Soil Fertility and Permanent Agriculture, by Hopkins.....	2.70	3.50	6
Traction Farming and Traction Engineering.....	1.65	2.25	3
Types and Breeds of Farm Animals.....	2.40	3.25	5
Young Farmer, by Hunt.....	1.50	2.35	3
POULTRY, ETC.			
Built and Used by Poultrymen (excellent).....	.50	1.25	1
Belgian Hare Guide.....	.25	1.20	1
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Minorcas—Every Comb and Color.....	.50	1.45	1
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Perfecting Poultry of America.....	2.50	3.00	5
Poultry Houses and Fixtures.....	.50	1.40	1
Pigeons—All About Them.....	1.00	1.90	2
Reliable Poultry Remedies.....	.25	1.20	1
Rhode Island Reds.....	.75	1.65	2
Turkeys.....	.75	1.65	2
Western Poultry Book, by Mrs. Basley.....	1.00	1.75	2
BEES			
A B C and X Y Z of Bee Culture.....	2.00	2.85	4
Beekeeper's Guide, by Dr. Cook.....	1.20	2.00	3

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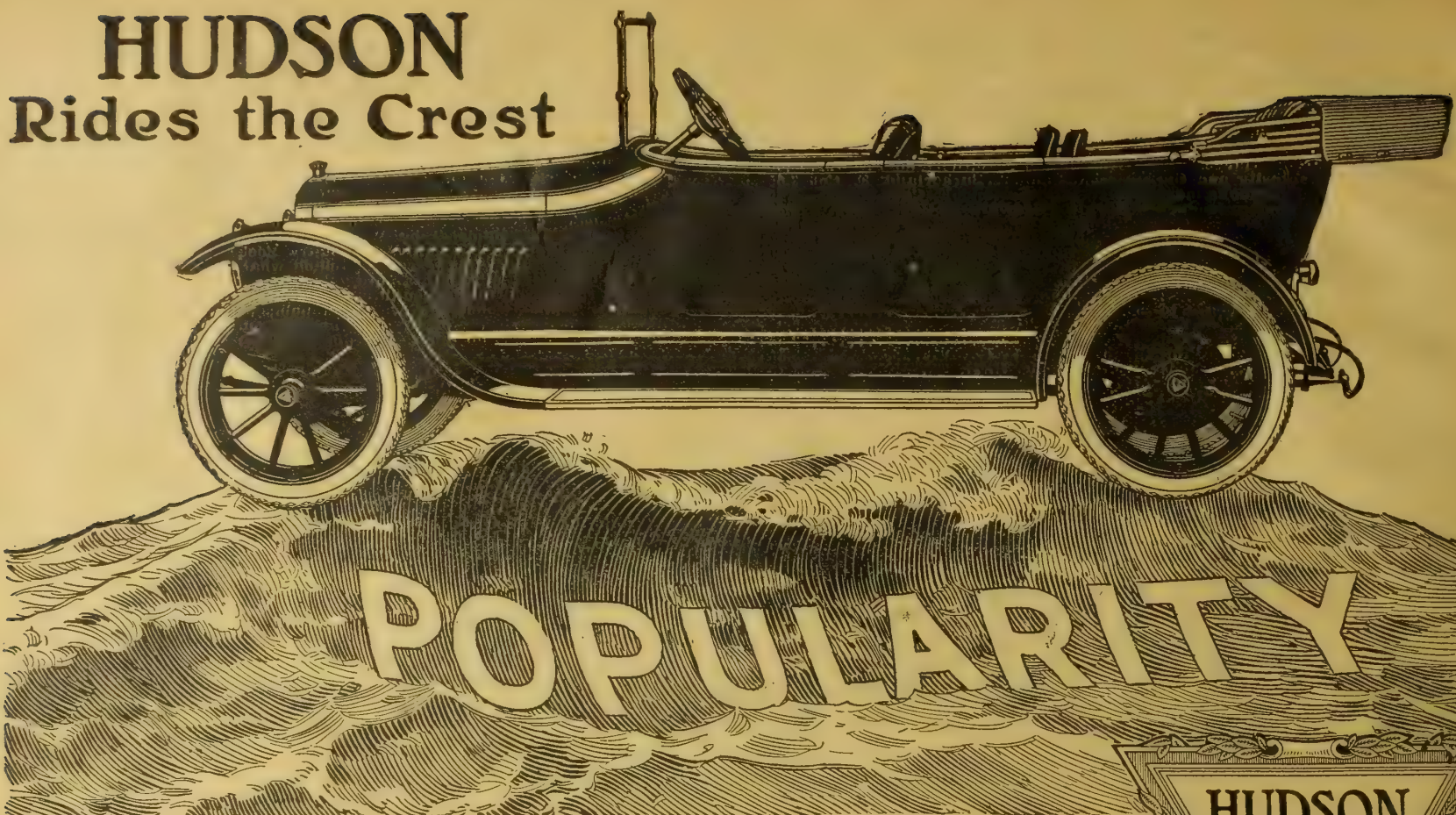
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HUDSON

Rides the Crest



1041 Sold in Two Days

On Monday and Tuesday, June 14th and 15th—Opening Days for This New Model—Dealers Sold to Users 1041 HUDSONS

This new-model HUDSON—for 1916—was first announced in the newspapers on June 13th. About the same time announcement was made in Farm Papers and weeklies covering America. All announced these four great innovations:

**The Yacht-Line Body
The Lustrous Finish
More Room and Luxury
A \$200 Price Reduction**

On Monday and Tuesday, June 14th and 15th—the opening days—every HUDSON showroom in the country was crowded to the street. Every road around brought farmers to see this newest car.

Many thousands of men were turned away. There was no chance for demonstrations. Even careful inspection was almost impossible. Yet 1041 men in those two days bought these new-model HUDSONS. In those two days men paid \$1,400,000 for a HUDSON model none had ever seen before.

The Avalanche

June 14th and 15th broke every record in the sale of high-grade cars. We knew the avalanche was coming, but the actual demand amazed us. All over the country motor car buyers had been waiting this new model. We held our announcement until dealers could get reasonable stocks ahead.

But the first two days sold nearly half a month's output. By the time this appears our deliveries of this new model will reach 4500, probably. We are building 115 per day. But that will hardly begin to supply the men who want this HUDSON car.

Came Like a Comet

It was only 22 months ago when this HUDSON introduced the new-type Six. It was designed by Howard E. Coffin, the famous HUDSON designer, and weighed under 3000 pounds. It cut fuel and tire cost in two.

The price was \$1750 then, but that price was the season's sensation. To sell a high-grade Six under \$2000 was considered impossible then.

The demand for that car was far ahead of supply. The next

We have dealers everywhere. These are a few in your vicinity:

CALIFORNIA

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Anaheim—P. J. Weisel Co.
Chico—Guynn & Guynn
Corning—J. B. Lukens
Eureka—Knudsen-Lundblade Co.
Escondido—A. F. Hubbard
Fillmore—John Opsahl
Fort Bragg—Scott-Conway Garage & Machine Co.
Fresno—Evans Auto Co.
Gridley—Gridley Garage

Hemet—Gibbell & Aylesworth
Lordsburg—C. H. Larimer
Los Angeles—Harold L. Arnold, 1122 to 1128 S. Olive St.
Modesto—L. H. Peterson
Monterey—J. M. Bussey
Oakland—H. O. Harrison Co.
Pasadena—Munroe Motor Co.
Redlands—G. M. Bartlett
Rio Vista—L. H. Church
Sacramento—Arnold Bros.
San Bernardino—H. J. Kelly

San Francisco—H. O. Harrison Co.
San Diego—M. L. Sarsfield
San Jose—Normandin-Campen Co.
San Pedro—Amar & Foot
Richmond—H. A. Sellers
Santa Cruz—Jensen Bros. Auto Co.
Stockton—Patterson's Hudson Garage
Vacaville—M. Banker Ukliah and W. S. Killingsworth, Jr.
Ventura—W. E. Mercer
Watsonville—Lovering & Connell
Whittier—Jefferson Walbridge

HUDSON
\$1350
F. O. B.
DETROIT

season we doubled our output and brought the price to \$1550. On that model last summer we were at times 4000 cars oversold.

On this new model we doubled our output again, and brought the price to \$1350. In but a few months this new-type car has quadrupled the HUDSON output. It has changed the whole idea of a class car. Today it dominates in a conspicuous way the field of the quality Six.

No Car Like It

HUDSON popularity brought many a follower. Within a few months there were dozens of makers building cars in the Light Six class.

But Howard E. Coffin and his engineers had then spent three years on this HUDSON. They were working all the time to improve it. They worked out countless refinements. Within 20 months they had added to this HUDSON 51 distinct improvements. And our multiplied output had brought the price down to \$1350.

Today this HUDSON finds no rival in sight of it. Such a car at such a price is impossible with small productions. Many of the best of HUDSON features are not found in other cars. Today you cannot find even second choice to the HUDSON if you seek a high-grade Six.

New 1916 Features

This new-model HUDSON brings out the Yacht-Line body. It shows for the first time the Lustrous finish. Each coat is baked on in enormous ovens. It has a roomier tonneau, a wider rear seat. It has disappearing extra seats to double the tonneau room.

It has enameled leather upholstery. It has deep, luxurious cushions.

And it has, above all, the approval of owners. Many thousands of men have proved out this HUDSON on millions of miles of road. Any owner will endorse this to you as the perfect car.

Go see it before our summer output is sold. Now you can get an early delivery. Later we fear that you cannot.

**7-Passenger Phaeton or 3-Passenger Roadster,
\$1350, f. o. b. Detroit. New Cabriolet, \$1650.**

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DETROIT, MICHIGAN**

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LOS ANGELES

July 15, 1915

SAN FRANCISCO

California Walnut Grove



One of the groves of the California Walnut Growers' Association and a view down the road over which the nuts are hauled to the packing house. California has many miles of good roads and many productive walnut orchards



Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Cyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Cyclopedia. Write us about it.

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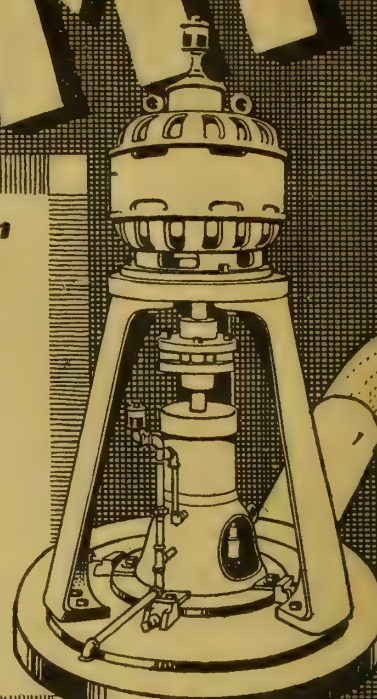
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Vol. XLV No. 3

LOS ANGELES: THURSDAY, JULY 15, 1915

One Dollar Yearly

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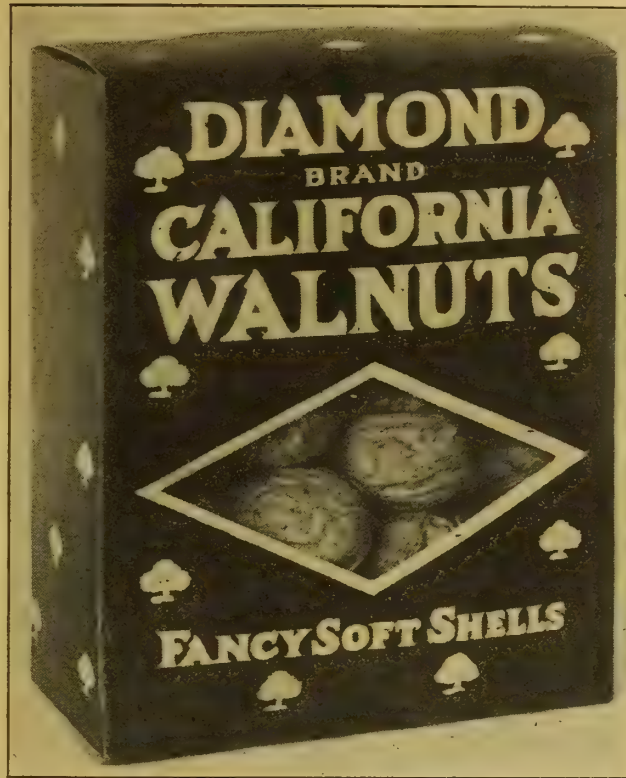
Pack of Trademarked California Nuts Gives Assurance of Quality

Difficulties in the way of marketing California products only lend zest to the game. The California Fruit Growers' Exchange met the condition of the greatest citrus fruit crop ever and a financial depression, perhaps the greatest ever, with a campaign of advertising and of marketing methods which has resulted in closing the orange season most satisfactorily to the growers.

Now comes the California Walnut Growers' Association with an up-to-date idea. It will try the experiment of marketing fancy soft shell California nuts under its Diamond Brand in pound cartons. The front of the carton is given almost entirely to "Diamond Brand California Walnuts, Fancy Soft Shells." In the center is a diamond opening with isinglass back, which permits the fancy soft shells to peep into the world and give the purchaser a demonstration of the fine quality of the goods which are guaranteed by the association. The walnuts are carefully selected and all packed in California. On the back of the carton is:

"Diamond Brand California Walnuts. California Walnut Growers' Association Diamond Brand.

"California produces the finest walnuts grown and the choicest of these



New Type of Carton Used by California Walnut Growers' Association. Note Opening Which Permits of a View of the Goods

Quality is Secured by Thrifty Orchards as Illustrated on Cover

are packed under the 'Diamond Brand.'

The quality of Diamond Brand nuts is guaranteed. They are put up in packages so the consumer can easily identify and always be sure of getting these guaranteed nuts.

"Packed by the growers in their own walnut groves, and shipped direct.

"One and two-pound sizes. When ordering specify Diamond Brand and you will get the same high quality nuts this package contains."

Manager Thorpe says that at least 1,000,000 of these cartons will be put on the market this year. There will be no extensive advertising campaign taken up but the market will be tested and the wishes of consumers learned, and another year it is probable the campaign will be materially enlarged.

The manager of the association pushing this aggressive fight is Carlyle Thorpe, and the board of directors are: C. C. Teague, R. W. George, P. F. Cogswell, A. T. Currier, Roger G. Edwards, James A. Fay, R. M. Hargraves, C. W. Leffingwell, Jr., M. Nisson, Ralph McNeese, Robert H. Neely, B. F. Porter, T. A. Rice, H. C. Sharp, L. T. Webster, George M. Williams, George A. Cook, H. Zander, George E. Farrand, S. H. Stow, W. S. Dunshee.

Making Orange Vinegar

Written for California Cultivator by W. V. Cruess

THE California pure food law requires that a vinegar must contain at least 4 per cent acetic or vinegar acid in addition to the natural fruit acid, which usually amounts to over .5 in oranges. Vinegar manufacturers do not usually use the word "per cent," but employ the term "grains strength," which is simply per cent acid as acetic multiplied by ten. For example a "45-grain" vinegar is a vinegar containing 4.5 per cent acid. A number of methods are in use for testing the acid strength of vinegar, but the most simple and easily operated tester is the Leo acid tester. Any one desiring to make vinegar commercially should have some means of ascertaining the acid strength of his vinegar so that it will conform to the pure food standards.

Vinegar making depends on two separate and distinct fermentations. The first is the conversion of the fruit sugars into carbonic acid gas and alcohol by the action of yeast; the second is the fermentation of the alcohol to acetic acid by the vinegar bacteria. (Vinegar mother is simply an aggregation of vinegar bacteria.) The acid formed by vinegar bacteria is poisonous to yeast, and yeast fermentation is stopped by the presence of a small amount of acetic acid; hence it is imperative that the yeast fermentation be complete before vinegar fermentation is allowed to start. Therefore the practice of adding "vinegar mother" to fresh juice is not a safe plan, because it may form enough acid to stop alcoholic fermentation.

Extraction of Juice

The extraction of the juice for vinegar making is easily done by crushing

and pressing the whole fruit. An apple or grape crusher and apple or grape press will do the work. Oil from the skins will do no particular harm in this case.

Control of Yeast Fermentation

Orange juice contains all manner of yeasts, molds and bacteria, but only a small amount of suitable forms of yeast. There are only a few varieties that will ferment the sugar completely without wasting it; most of the yeasts found in orange juice waste the sugar by fermenting it to carbonic acid gas and water instead of to alcohol and carbonic acid gas. In a good fermentation of orange juice with ten per cent sugar the juice should contain at least five per cent alcohol after fermentation. In practice, five per cent alcohol should give under normal conditions 4.5 per cent acetic acid at least. This would be only .5 per cent above the pure food standard. Since ten per cent sugar may be taken as a fair average for ripe fruit we can readily see that the margin is small and that sound fermentations must be obtained.

Experiments have shown that the undesirable yeasts can be removed by using not more than two ounces potassium metabisulfite per 50 gallons of juice. This material furnishes sulfurous acid, the active principle in removing undesirable yeasts. The amount used is very small and practically all disappears during fermentation. This substance is best added after dissolving the required amount in water.

To the treated juice about three gallons of wine yeast per 100 gallons juice must be added. This yeast carries on a rapid and complete fermentation

lasting about five days at ordinary summer temperatures. The yeast can be obtained from the University of California. Directions for increase of the yeast and its use are sent with it.

Fairly good results can be obtained, however, by the use of compressed yeast without the use of the metabisulfite. To use this yeast a starter is made by heating one gallon of juice to boiling, letting it cool four or five hours to room temperature, adding a cake of compressed yeast, and keeping the juice in a clean scalded demijohn in a warm place two or three days. This gallon can then be used to start five gallons of boiled and cooled juice. This five gallons can then, when rapidly fermenting, be used to start 100 gallons of fresh unheated juice. The 100 gallons in turn or a portion thereof can be used to start the next fermentation; and so on. The repeated transfer of the yeast accustoms it to the juice. Beer yeast can not be used safely because it ferments too slowly and incompletely.

Vinegar Fermentation

When alcoholic fermentation is over, as evidenced by ceasing of gas evolution and absence of sweet taste, the acetic fermentation should be started. Unlike apple cider, fermented orange juice does not normally develop a vinegar fermentation spontaneously, but simply grows "wine flowers," a fungus which ferments alcohol to water and carbonic acid gas, and the "wine flowers" may be followed by putrefying bacteria finally turning the orange wine into a putrid liquid.

If to each 100 gallons of orange juice, after yeast fermentation is complete, 25 gallons of strong vinegar (preferably new vinegar) is added,

normal fermentation will result. This will give a strong vinegar. The first fermentation may be started with cider vinegar. When this lot is made it can be used to start other lots.

Air is required for vinegar fermentation; therefore the barrels used should be filled only two-thirds to three-fourths full and the ends perforated above the level of the liquid for free passage of air. Bulletin 227 of the California experiment station (obtainable on request to the Dean, College of Agriculture, Berkeley, California) gives a diagram of such a barrel. With such an arrangement and with a starter of vinegar as outlined, fermentation should be complete in six months or less.

Rapid generators are used in large factories. They are simply tall narrow tanks fitted with a false head and filled with beech wood shavings or rattan strips. The vinegar stock trickles down over the shavings and air comes in through vents near the bottom. The shavings present an enormous surface coated with bacteria. On the surface the combination of the oxygen of the air and the alcohol to form acetic acid is very rapid. Such generators have a capacity of 25 to 50 gallons per 24 hours. They average about 12 feet by 40 inches in size. See Bulletin 227 for diagram.

A very simple and effective generator can be made from a barrel or small size tank as shown in the accompanying diagram. The barrel is divided longitudinally into two compartments with two perforated partitions or shelves with a space between the shelves for air circulation. Air inlets are placed at the ends of the barrel as shown. The spigot that happens to be uppermost is left open as

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an air outlet. The barrel is filled less than half full. It is rotated one-half way around several times daily. In this way one-half of the shavings is wet with vinegar and exposed to rapid aeration. Vinegar fermentation is rapid in such an apparatus. For convenience in rotation the barrel may be placed on two scantlings.

Clearing the Vinegar

When the vinegar has reached 4.5 per cent acid or over it may be filtered through any form of filter used in wine making if the metal parts of the filter are heavily tinned to prevent corrosion by the acid. For small scale operations bag filters will answer the purpose. Filtration is increased greatly in speed and the clearness of filtrate greatly improved by adding a small amount of infusorial earth such as uncalcined Filter-Cel to the vinegar before filtration.

The vinegar can also be cleared by use of Spanish Clay. This is used by grinding it finely, mixing and agitating with a small amount of vinegar for a

what by hand labor in order to level the floor of the basins so that water will spread quite evenly over the entire surface. A permanent furrow may be left between the basins in the direction of irrigation from which the water may be turned into the basins. Alfalfa hay, bean straw, or stable manure are the best materials for this purpose. Two bales of either of the former, or 20 feet of stable manure to the tree should be about right for the original application. This should be added to from time to time so that the entire ground in the basins remains covered.

Considerable attention is given at the present time to some system of mulching the entire ground in citrus orchards. We are not in a position as yet to say whether or not any such system is proper or practicable for California conditions. There are a number of things, however, which tend to indicate both the safety and value of such treatment sufficiently to strongly endorse it for the limited purpose suggested above. Among these

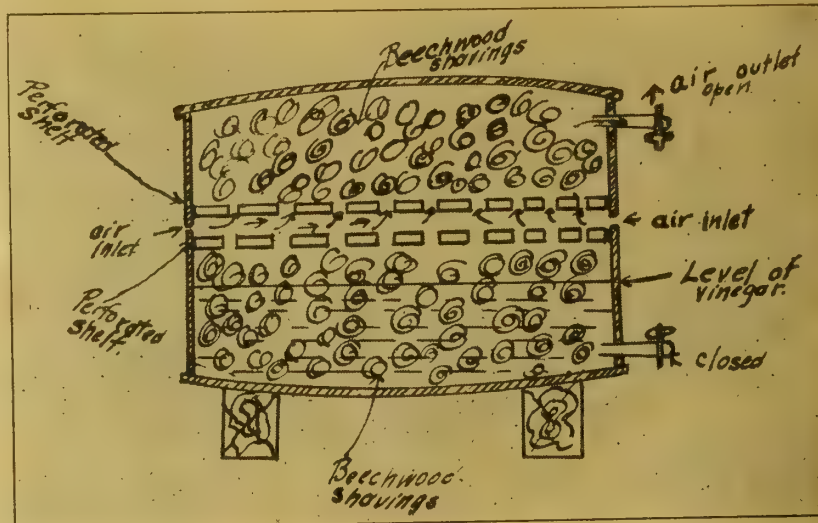


Diagram of Barrel Rapid Vinegar Generator Adapted from Pacottet, Eau de Vie et Vinaigres

week or ten days, adding this mixture to a larger quantity of vinegar, mixing, and allowing to settle until clear. The clear vinegar can then be drawn off from the sediment and the sediment filtered through a bag filter. Usually four to eight pounds of clay per 100 gallons will be sufficient; if the first trial fails, simply add more of the prepared clay.

Bleaching

Orange vinegar is very dark in color. The excess color can be removed by a small amount of pure bone black added before filtration if so desired.

Bottling

Bottles should be filled as full as possible to check excessive formation of vinegar mother; or the vinegar may be pasteurized at 145 degrees Fahrenheit after bottling. Bottles using beer caps are convenient. Capping machines are inexpensive and can be obtained from any large bottle company or dealer in capping machines.

AN IRRIGATION SUGGESTION

By R. S. Vaile

One problem which is confronting citrus growers is the difficulty of properly distributing irrigation water to the trees nearest the head flume and furthest from same. In some 100 groves visited this summer during irrigation over 75 per cent were noted where the trees at the lower end of the rows were either getting only a small portion of the amount of water given those at the upper end, or else a very considerable amount of water was being wasted as run-off. In several cases it was estimated that the equivalent of one-half inch of rainfall for the acreage being irrigated was lost in this way.

The remedy for the above condition which appeals to us as being the most practical and efficient, and which has been tried by sufficient growers to assure its possibilities, consists of a system of permanent basins filled with mulch around the lower few rows of trees. For this purpose square basins covering nearly the entire ground should be made. The outlines of these basins may be thrown up with any ordinary ridger. This work should be supplemented some-

may be mentioned as important for consideration the more uniform moisture and temperature conditions obtainable, the avoidance of having to work the ground too wet, the elimination of the tendency to form plow sole and the permitting of roots to feed in that part of the soil near the surface where a large portion of available nitrogen is concentrated. Recent moisture determinations comparing this system with clean culture show that less water is required to maintain a given moisture content. Mulching of the entire ground has proven of great value in Florida, Cuba and elsewhere, and we believe that in the limited form suggested it is applicable to our conditions and will prove a real benefit.

THE CITRICOLA SCALE

Prof. H. J. Quayle has been making a long study of the citricola scale which was formerly supposed to be the soft brown scale. He has written an account of his studies and experimental work in the control of this pest which appears as Bulletin 255 of the agricultural experiment station of the University of California.

The summary which gives the gist of the book is quoted in full:

"The citricola scale is one of the economically important citrus insects of California.

"It is at present distributed over widely separated localities and in some sections is spreading rapidly.

"The young appear by the last week in April and continue to appear until August.

"During the summer, fall and winter the scales are found on the leaves almost exclusively and grow very slowly.

"In November, and later, a few migrate back to the twigs but the greatest migration occurs in March.

"With the warm weather of spring they rapidly mature and begin to deposit eggs late in April.

"One full year is thus required, usually, for the life cycle.

"Fumigation between July 15 and September 15 is the most satisfactory treatment. Fumigation results are less certain later in the year.

"Where fumigation is not feasible, spraying, as explained in the text, may be employed."

THE CITRUS INDUSTRY OF SOUTH AFRICA

Written for California Cultivator
By Carl Nichols.

CITRUS growing in South Africa, although a comparatively new industry, is becoming of considerable importance, especially in the Transvaal. The following brief account of the industry may therefore prove of interest to California citrus growers. Most of the information was obtained by correspondence with Mr. R. R. Davis, chief of the division of horticulture, department of agriculture, Union of South Africa, Pretoria, Transvaal, and with Mr. Chas. E. Farmer, citrus adviser, British South Africa Company, Salisbury, Rhodesia.

History of Industry

Interest in the citrus industry of the Transvaal first had its inception in the year 1906; in that year the possibility of a large output was first recognized. In 1906 the Royal Horticultural Society of London held an exhibition of all kinds of fruits which could be shown during the month of June, this exhibition being open to all the British colonies. The exhibit from the Transvaal was collected and packed by Mr. R. A. Davis. In competition with six other colonies this exhibit was fortunate enough to secure almost every medal and first award given. Mr. Davis was so pleased with the results that he secured a small grant from the government, began to purchase oranges from the growers and to export in the holds of the mail steamers which sailed weekly. The prices realized were sufficiently satisfactory to induce others to follow the example set, and that year some 3,000 boxes were exported. From that time the exports increased until in 1913 40,000 boxes were shipped. During 1914 up to the commencement of the European war still greater quantities were sent away; the war has, however, interfered with the regular sailings of the mail steamers, which are now devoted to other work.

Until within the last seven or eight years no named varieties of oranges were grown, the export trade consisting almost wholly of seedling fruit. Now the superior named varieties are being planted, and as better fruit is produced better prices are received. As a consequence the planting of citrus trees on a scale not heretofore dreamed has commenced.

Regions and Climate

Citrus fruits can be grown over three-fourths of the whole of South Africa. The higher inland plateaus which are characterized by intense cold in winter are about the only unsuitable parts. The coast districts have little or no frost; the summer temperature seldom rises above 95 degrees Fahrenheit and this region is characterized by high winds. The average rainfall is about 33 inches. Farther inland frosts do occur, winter temperatures sometimes falling to 10 degrees Fahrenheit. Summer temperatures inland reach 110 degrees Fahrenheit as a maximum, with occasional spells of three days' duration up to 115 degrees Fahrenheit. High winds inland are not common except in August and September.

Soils

The soils vary from light red sandy loams to dark chocolate soils of the same character. Towards the south

coast are alluvial deposits extremely deep and rich and still being added to each year by the overflow from the rivers. Sandstone, granite and quartz rocks predominate.

Acreage Production, Etc.

Accurate statistics are being prepared at the present time as to the citrus acreage, but these are not yet ready. The approximate production is as follows: Oranges, 1,000,000 boxes; mandarins and tangerines, locally known as Naartjes, 350,000 half straps. Practically all citrus exports go to England, the approximate value of the same in 1913 being about £18,000, or \$87,480. Mr. Davis believes that the expansion of the citrus industry in South Africa has no limit except insofar as it is influenced by the ability of the European nations as consumers.

Varieties

Most of the recent plantings consist of Valencia Late and Washington Navel oranges. There are some plantings of the Du Roi, Pineapple, St. Michael and Jaffa varieties, with some extra good seedlings here and there. Mr. Davis states that some of the old seedling trees in the Transvaal bear exceedingly fine fruit.

Irrigation, Fertilization

Irrigation water mostly comes from springs and rivers. Wells as we see them in California are seldom found in South Africa. There is only one instance of oranges being watered from an artesian well, this well or series of wells occurring around the crater of an extinct volcano. Many of the farms in South Africa are 7,000 to 10,000 acres in extent, and in such large pieces of land favorable situations are often found for damming up water in large reservoirs, and this is a common procedure.

The fertilization of citrus orchards is still little practiced beyond the application of barnyard manure. Cover crops are coming into use in some orchards.

Frost Protection

This seldom has to be resorted to except in the case of young trees which are protected in winter when necessary by covering with long grass; soil is also sometimes heaped around the roots.

Insect Pests and Plant Diseases

The most serious insect pests are the fruit fly, *Ceratitis capitata*, the Natal codlin moth, *Euarmonia batrachopia*, and the various citrus scales. Root rot and collar rot are the two most serious citrus diseases.

People Engaged in the Industry

The bulk of the people in the Transvaal are of Dutch extraction, but recent large undertakings are in the hands of people of British descent. The labor problem is rather unsatisfactory, as the white people do not like to work. Colored labor is usually resorted to. Mr. Davis has occasionally induced white girls to take up the packing of fruit and believes that in time matters will improve.

Cooperative Societies

There are once or two local cooperative societies, which grade, pack, and market the members' fruit, but there is no general exchange such as the California Fruit Growers' Exchange.

Citrus Growing in Rhodesia

At present the citrus plantings in Rhodesia are small, due partly to the lack of sufficient trees in local nurseries. Two nurseries have been established and will be able to supply the demand for trees during 1915. As soon as the supply of nursery trees becomes sufficient, plantings will without question greatly increase. In 1914 two groves of about 60 acres each had been laid out on commercial lines. Almost every farmer has a few trees, from 50 to 100, planted about the yard for domestic use.

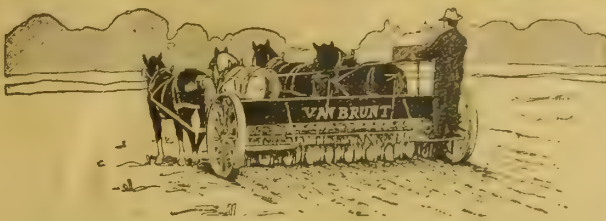
Exports

Much interest was taken in growing fruit for export in 1914. Small trial shipments exported to London in 1913 were very favorably received and Valencia Lates in October brought good prices in competition with the first arrivals of Jamaican fruit.

Varieties

The chief varieties of citrus trees
(Continued on Page 71)

John Deere Implements



Van Brunt Single Disc Grain Drills

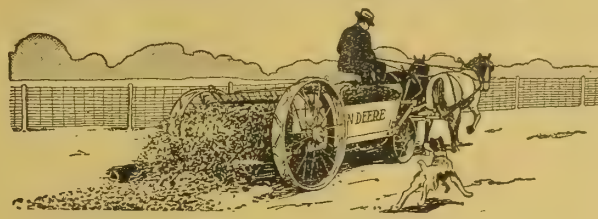
Plant any small grain, from alfalfa to bearded oats, corn and peas, even in trash, gumbo or mud.

Van Brunt Drills never choke. Adjustable gate force feed compels an even, continuous flow through each seed tube. Amount sown regulated simply by moving a lever.

Seed is planted at even depth. Individually adjustable springs enable you to give each furrow opener the required pressure for hard or soft ground to make furrows of even depth, and the seed is placed at the bottom of the furrows. All of the grain is up and ready for harvest at the same time.

Van Brunt Drills are light weight, light draft, well balanced and strong. Frame is rigid; hopper does not sag; the gear drive is positive (each wheel drives half the feeds) and the disc bearings are guaranteed to last lifetime of drill. Spring steel scrapers keep the discs clean.

Write us for free booklet, "John Deere-Van Brunt Single Disc Drills." It tells why the Van Brunt plants seed at bottom of furrows of uniform depth, and what this means to you.



John Deere Spreader

The Spreader with the Beater On the Axle

The beater—the business part of a spreader—and all its driving parts, is mounted on the rear axle. This is a patented feature. You cannot get it on any other spreader.

The beater on the axle means there are no clutches to give trouble, less than half the parts heretofore used on the simplest spreader, big drive wheels and a low down spreader without stub axles. Only hip high to the top.

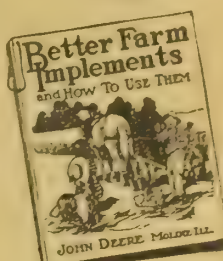
New Revolving Rake

In addition, the John Deere Spreader has a revolving rake that delivers an even amount of manure to the beater. It keeps the beater clear and working free. It works entirely independent of the rest of the spreader and assures uniform spreading. It decreases—not increases—the draft. Another exclusive feature.

Call on nearest John Deere dealer and see the spreader with the beater on the axle. Write for "Farm Manures and Fertilizers," a valuable text book free.

John Deere Publicity Department, Moline, Illinois

A New Book Free



Just Off the Press

Illustrates and describes the most complete line of farm implements. Tells how to adjust and use farm tools under varying conditions. It is a practical encyclopedia of farm implements worth dollars to you—a 168 page text book.

It tells about John Deere Implements: Steel plows, cultivators and harrows; corn planters, disc harrows and beet tools; farm and mountain wagons; manure spreaders; portable and stationary grain elevators and corn shellers; hay loaders, stackers, sweep rakes, mowers and side delivery rakes; motor hay presses; grain drills and seeders; full line of chilled plows; grain binders and corn binders; hit-and-miss and volume-governing gasoline engines.

To get this book free, state what special implements you are interested in and ask for the book as Package No. X-111.



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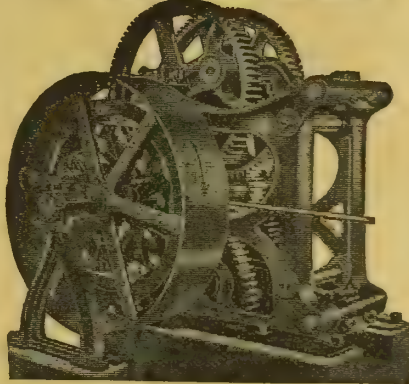
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John Deere
Farm Implements

Pomona Deep Well Pumps



—built and sold in California for over 12 years. Hundreds of buyers will tell you they are always reliable and economical.

For deep lifts, as well as shallow lifts, combined with high heads above surface and through long pipe lines. No auxiliary pump needed for forcing water above the surface.

Write for catalog 103 with valuable information on irrigation.

Pomona Mfg. Co.
Pomona, Cal.



SLUG-SHOT

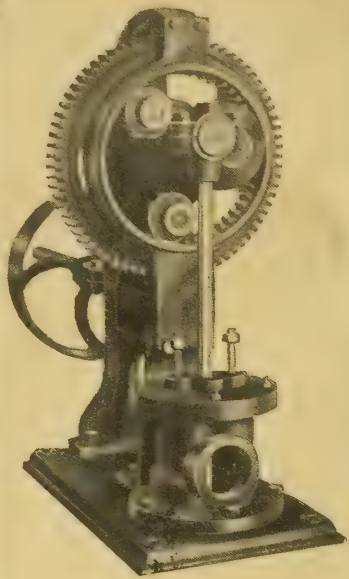
USED FROM OCEAN TO OCEAN FOR 35 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Bugs and Blights, etc., to

Hammond's Paint and Slug Shot Works, Beacon, New York

When writing advertisers, mention The Cultivator.



A Perfectly Balanced Single - Acting Jack

"A Straight Line Pull"

Write for Circular Bulletin C

Stearns Gas Engine Works
1005 No. Main LOS ANGELES

Spraying Time

and there is no better spray than

Scalefoe

Not only for scale but nearly all insects, worms and bugs that infest plant life. It has been killing them for 15 years, giving the greatest satisfaction without injury, but positive benefit, to the plant. Send for our circular of testimonials or better, try it.

Gallon can, 50c;

5-gal. can, freight prepaid, \$2.00.

Must be mixed 20 parts water to one Scalefoe before using, making it very cheap. Write for prices in barrels delivered at your freight station.

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TOMPKINS & CO.
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For large or small orchards, market gardens, potato farms, grain, cotton, tobacco, home and garden work, poultry plants, whitewashing, cleaning, cold water painting, etc. From Bucket, Knapsack and Barrel Sprayers to Traction and 50, 100, 150 and 250 gallon Power Sprayers—complete or in part to build up Sprayers already in use. 40 combinations.

IRON AGE \$3 to \$300

They have outside pumps, no corrosion. Unit sprayers, so you can build bigger when necessary.

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Agricultural Implements, Wagons,
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1c IS WORTH DOLLARS

when you invest that 1c in a postal card to us. Here are a few of the good things in it for YOU.

1 1/2 H-P. \$24.75	5 H-P. \$87.50
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WE GUARANTEE AGAINST REPAIRS FOREVER.
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JIMSON WEED

You can get 1 1/2 cents a pound for the fresh picked leaves. We pay cash and the freight besides. Write for particulars. Haas Seed Co., 1800 Lincoln Ave., Pasadena, Cal.—Adv.

Deciduous

Fruits

CROP REPORTS



CHIEF Deputy George P. Weldon of the state horticultural commission writes regarding condition of fruits on July 1 as follows:

Almonds: Alameda County, 45 per cent of normal crop; Butte, 70 per cent; Colusa, 60; Contra Costa, 80; Fresno, 100; Glenn, 100; Lake, 75; Los Angeles, 75; Madera, 100; Mendocino, 80; Merced, 100; Monterey, 75; Napa, 80; Nevada, 100; Placer, 75; Riverside, 100; Sacramento, 85; San Benito, 100; San Joaquin, 75; Shasta, 50; Sonoma, 75; Stanislaus, 100; Sutter, 75; Tehama, 100; Tulare, 90; Ventura, 100; Yolo, 75; Yuba, 70.

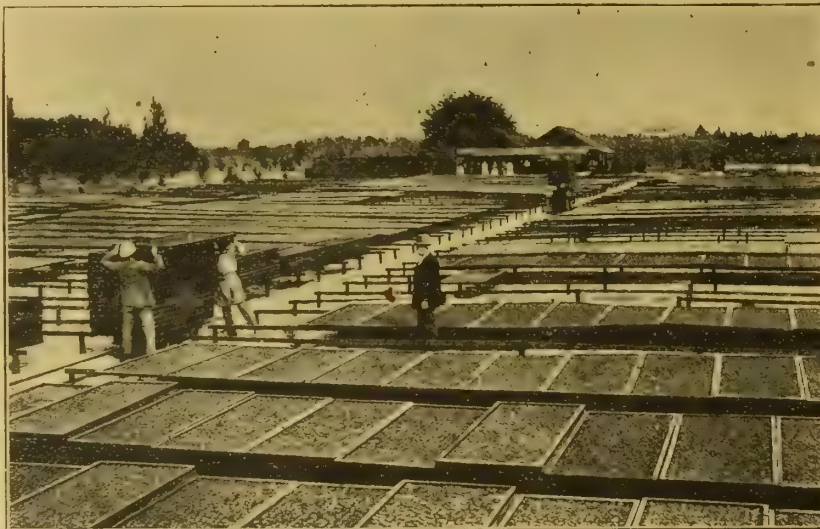
Apples: Butte County, 30 per cent of normal crop; Contra Costa, 80; El Dorado, 70; Glenn, 100; Humboldt, 85; Inyo, 40; Kern, 60; Lake, 50; Los Angeles, 100; Madera, 50; Mendocino, 75; Monterey, 60; Napa, 75; Nevada, 25; Orange, 60; Placer, 75; Riverside, 65; Sacramento, 100; San Benito, 100; San Bernardino, 75; San Diego, 25; Santa Barbara, 100; Santa Clara, 70; Santa Cruz, 70; Shasta, 50; Siskiyou, 80; Sonoma, 75; Stanislaus, 75; Sut-

nardino, 95; San Joaquin, 100; Santa Clara, 85; Shasta, 90; Sonoma, 100; Stanislaus, 76; Sutter, 65; Tehama, 75; Tulare, 100; Yolo, 100; Yuba, 100.

Peaches, shipping: Butte, 85 per cent of normal crop; Contra Costa, 90; El Dorado, 85; Fresno, 70; Inyo, 50; Kern, 95; Kings, 100; Los Angeles, 100; Madera, 80; Mendocino, 80; Merced, 75; Monterey, 60; Napa, 80; Nevada, 100; Placer, 100; Sacramento, 80; San Bernardino, 95; San Diego, 100; San Joaquin, 100; Santa Clara, 85; Santa Cruz, 60; Shasta, 90; Sonoma, 100; Stanislaus, 70; Tulare, 100; Yolo, 100; Yuba, 100.

Pears: Alameda County, 70 per cent of normal; Colusa, 100; Contra Costa, 65; El Dorado, 60; Glenn, 100; Humboldt, 80; Inyo, 50; Lake, 80; Los Angeles, 90; Mendocino, 65; Monterey, 60; Napa, 50; Nevada, 90; Placer, 50; Riverside, 75; Sacramento, 80; San Benito, 50; San Bernardino, 50; San Diego, 25; San Joaquin, 100; Santa Clara, 65; Santa Cruz, 50; Shasta, 20; Siskiyou, 100; Sonoma, 75; Stanislaus, 70; Sutter, 75; Tehama, 25; Yolo, 70; Yuba, 100.

Plums: Alameda County, 80 per



Dry Yard Scene

ter, 80; Tehama, 50; Tulare, 90; Yuba, 100.

Apricots: Alameda, 65 per cent of normal crop; Colusa, 100; Contra Costa, 70; Fresno, 75; Glenn, 90; Imperial, 80; Inyo, 55; Kern, 85; Kings, 100; Lake, 75; Los Angeles, 75; Madera, 75; Mendocino, 100; Merced, 75; Monterey, 25; Napa, 75; Nevada, 80; Orange, 25; Placer, 70; Riverside, 100; Sacramento, 85; San Benito, 75; San Bernardino, 95; San Diego, 100; San Joaquin, 100; Santa Barbara, 80; Santa Clara, 70; Santa Cruz, 50; Shasta, 75; Sonoma, 100; Stanislaus, 60; Sutter, 90; Tehama, 90; Tulare, 75; Ventura, 75; Yolo, 70; Yuba, 70.

Figs: Colusa, 100 per cent of normal crop; Fresno, 100; Glenn, 100; Kern, 100; Madera, 100; Merced, 100; Nevada, 100; Shasta, 75; Stanislaus, 100; Sutter, 100; Tehama, 75; Tulare, 100; Yolo, 90; Yuba, 100.

Olives are reported from nearly everyone of the larger producing sections as practically 100 per cent of normal.

Peaches, canning. Butte County, 85 per cent of normal crop; Contra Costa, 90; Fresno, 70; Kern, 95; Kings, 100; Lake, 75; Los Angeles, 100; Madera, 80; Mendocino, 80; Merced, 80; Napa, 85; Nevada, 100; Orange, 100; Placer, 100; Riverside, 100; Sacramento, 85; San Benito, 100; San Bernardino, 95; San Joaquin, 100; Santa Clara, 85; Shasta, 95; Siskiyou, 80; Sonoma, 100; Stanislaus, 90; Sutter, 75; Tulare, 100; Yolo, 100; Yuba, 100.

Peaches, drying: Butte County, 85 per cent of normal; Colusa, 60; Contra Costa, 90; Fresno, 70; Glenn, 100; Inyo, 50; Kern, 95; Kings, 100; Lake, 75; Los Angeles, 100; Madera, 80; Mendocino, 80; Merced, 75; Napa, 85; Placer, 100; San Benito, 100; San Ber-

nardino, 95; San Joaquin, 100; Santa Clara, 85; Shasta, 90; Sonoma, 100; Stanislaus, 76; Sutter, 65; Tehama, 75; Tulare, 100; Yolo, 100; Yuba, 100.

Prunes: Alameda County, 65 per cent of normal; Butte, 40; Colusa, 100; Contra Costa, 60; Glenn, 100; Inyo, 75; Kern, 100; Kings, 100; Lake, 75; Madera, 65; Mendocino, 100; Monterey, 90; Napa, 90; Nevada, 90; Riverside, 100; Sacramento, 85; San Benito, 75; San Bernardino, 100; San Joaquin, 30; Santa Clara, 65; Santa Cruz, 75; Shasta, 85; Siskiyou, 100; Sonoma, 60; Stanislaus, 90; Sutter, 75; Tehama, 80; Tulare, 80; Yolo, 80; Yuba, 100.

Walnuts: Colusa, 100 per cent of normal; Contra Costa, 100; Glenn, 95; Lake, 75; Los Angeles, 100; Napa, 80; Nevada, 50; Orange, 100; Riverside, 100; San Benito, 100; San Bernardino, 100; San Joaquin, 80; Santa Barbara, 100; Shasta, 80; Sonoma, 75; Stanislaus, 100; Ventura, 110; Yuba, 100.

SPRAYING WALNUTS

"Spraying for the Control of the Walnut Aphis" is the title of Circular 131, by A. R. Taylor, published by the agricultural experiment station of the University of California. The circular opens with the statement that the European walnut aphis is said to occur in all parts of the world where the English or Persian nut is grown. In California there is no section free from this pest. The conclusion of the author is that the most effective control is secured by the use of lime sulphur spray in the winter and tobacco

extract spray in the summer. It has been found that the average cost of winter spraying of very large trees is not far from 75 cents.

DRIED FRUIT INSECTS

The department of agriculture at Washington has just issued Bulletin No. 235, "Control of Dried Fruit Insects in California." William B. Parker of the entomological division has been in California making investigations for some years. This bulletin of 16 pages is the result of his work. It touches upon insects which infest dried peaches, apricots, prunes, raisins and other fruits. The illustrations show several of our fruit pests and fruit which has been injured by them, also full illustrations of new types of cartons which can be used in packing fruits, even in 50-pound packages, so that they will be protected from the attacks of these insects.

We quote entire the page which gives the summary and conclusion:

"A considerable financial loss due to the infestation of dried fruit is experienced by packers, wholesale men, and retail dealers.

"There are several species of insects which attack dried fruits on the Pacific Coast, but of these the most common and destructive are the Indian-meal moth and the dried fruit beetle.

"Infestation takes place in the packing house, in the warehouse, and in the grocery store. The insects find their way to the fruit through small cracks in the boxes and between the folds of the paper.

"All insect life is destroyed in fruits that are put through the boiling dip, and the processing of other fruits can be accomplished by the addition of the belt heater to sterilize all fruit so treated.

"The use of an insect-free packing room and sterilized cartons or containers which are sealed before being placed in the warehouses or cars will protect the fruit from infestation unless the package is broken.

"There are several cartons and methods of sealing that can be applied to dried fruit, but their cost will determine their practicability.

"The secret of preparing an insect-free package of dried fruit is to sterilize it at a temperature of 180 degrees Fahrenheit and protect it from future infection by the use of the insect-free packing room and sealing in sterile cartons or packages.

"The sealed carton not only protects the fruit from infestation, but it prevents it from drying out and preserves it for long periods in the moist and attractive condition in which it was packed.

"Moist fruit can be successfully packed in sealed cartons, provided attention is paid to the moisture content. The fruit must be carefully drained and must not be packed too hot.

"Machines have been invented which will successfully wrap and seal small packages of dried fruit at a moderate cost per thousand.

"It is probable that the time is coming when it will be as necessary to put up dried fruit in sealed packages as it is to pack cereals in that form today."

DON'T DRY WINE GRAPES

Manager James Madison of the Associated Raisin Company has issued a letter urging growers not to dry wine grapes. He says:

"It is undoubtedly known to all raisin growers, and we trust to all grape growers as well, that the California Associated Raisin Company is using its best efforts and endeavors to put the very best raisins on the market in the most attractive shape, thereby hoping to increase the consumption. Therefore it is with some apprehension we have read in the papers that the wine manufacturers will not be able to use as many grapes as formerly and have advised all the grape growers to dry their grapes, which would naturally mean that there would be an overproduction of raisins, and the largest part of this additional production would be of very inferior quality.

"We therefore desire to advise the grape growers that for the purpose of preventing a large quantity of inferior raisins being put on the market we are endeavoring to make arrangement with the wine manufacturers so that all such grapes which it may be

possible to dry for raisins will be made into wine and have hopes that some arrangement to that effect can be made. Even if we should fail in our efforts, we would urge all grape growers that no grapes be dried except first crop Muscats (this has no reference to Thompsons or Sultanas).

"This is for your own protection for the future as this company cannot compete with its first class raisins against a large quantity of inferior dried grapes that may be placed on the market."

NATIONAL FERTILIZER ASSOCIATION

The National Fertilizer Association is holding its 22nd annual convention at Hot Springs, Virginia, this week. The members are discussing the relation of the fertilizer industry to agricultural and industrial development, fertilizer control laws, various scientific questions affecting soils and fertility and, of course, to be popular will also discuss the need of rural credits as well as many other questions affecting the fertilizer industry of the United States. Gustav Jarecki of Cincinnati is president and W. G. Sadler of Nashville is secretary.

NINETY AND STILL FARMING

Wm. Guilford of Orland, Glenn County, claims to have the prize English walnut tree and the most prolific Thompson Seedless grape vine in the state. And Mr. Guilford is probably the oldest active fruit grower in the state. He celebrated his 90th birthday in June and Mrs. Guilford was 86 the same month. On one stem of a heavily loaded English walnut tree there are 12 big nuts, and on a one-year-old Thompson Seedless vine there are over 50 big bunches of grapes. These walnuts and grapes—and oranges and lemons and berries and all manner of California fruits and vegetables—are a testimonial to the possibilities of water and cultivation on heavy clay land that was at one time considered of little value. There are thousands of acres of this heavy land in the Sacramento Valley that are very fertile and will some day be productive; when the labor that is required to till them properly is available.

PREPARATION OF SEED BED FOR CORN

A large number of farmers are planting a few trial patches of corn. Many of these will fail in their summer's trial, largely because the seed bed has not been properly prepared. Professor Geo. Severance, Agriculturist of the state experiment station at Pullman, gives the following recommendations in regard to the preparation of the seed bed.

It must be remembered that the growth of the young plants will depend largely upon the supply of food they secure, and that this food is secured through the root system of the plant. It is necessary, then, that the corn plants make a rapid and complete development of this feeding system.

The root system is extremely delicate and contains such an immense number of small rootlets and root hairs, when properly developed, that no space, even as small as a pea, can be found in the upper part of the soil that does not contain some of these root hairs. For such development it is necessary that the roots do not come in contact with hard clods. The entire furrow under the mulch should be thoroughly pulverized.

Where the land has not been plowed until the time to plant corn, nor the surface disked to hold the moisture, the furrow breaks over in chunks. If the surface is then worked only with a smoothing harrow, the bottom of the furrow where this root system must develop is in no condition for proper development. Soil in this condition at the time of plowing should be disked before plowing and be worked with some form of compacting and clod-mashing tool after being plowed and disked, in order to work the soil deeply enough.

Every root hair should come in contact with soil grains, hence the furrow should be well worked down, leaving no large holes, as is usually the case with late plowed land, particularly if considerable straw, stubble or other trash has been plowed under.

This is also necessary in order to insure a good supply of moisture. The

presence of large air spaces permits the rapid drying out of the soil, and breaks the capillary connection with the soil moisture beneath, so that the young plants in the seed bed are deprived of the moisture they must have.

Many farmers reason that because the corn is a cultivated crop they may save time by planting the corn and

condition at the outset to enable them to develop quickly and extensively, so that there will be no check in weaning from the mother seed.

Furthermore, the future cultivation does not fit the soil directly about the hill where the plant in its tenderest stage is obliged to draw its food.

If the ground is to be properly pre-

If the land is not fall plowed, the next best thing is early spring plowing. But whether plowed in the fall, early spring, or late spring, the fact must not be overlooked that the seed bed must be thoroughly prepared before planting if complete success is expected.



One of Eldorado County's Hillside Orchards

fitting the ground later. This is entirely wrong.

The first growth of the plant is from the limited amount of food supply stored in the seed. This will keep the plant but a few days. It must then draw its food from the soil. If the young, delicate plants are to make a vigorous growth from the start, the roots should find the soil in proper

pared for corn, it should have been plowed last fall so that the moisture may have been completely absorbed and the furrow settled by the winter rains. This has the further advantage of letting the weeds start in the early spring so that they can be largely cleaned out before the corn is planted. It also encourages the development of valuable food.

An agricultural cooperative society with 200 members known as the *Economia Agricola*, has been formed at Casilda, in the province of Santa Fe, Argentina. The society proposes to store and sell the produce of its members, dealing directly with exporters. It has sheds and machinery for shelling corn.

ATTENTION ALMOND GROWERS



One shipment of a train load of READ SURE POP ALMOND HULLERS & SEPARATORS shipped July 30th, 1912, by the Schmeiser Manufacturing Co., Davis, Calif.

Reports show excellent prospects for a better than normal crop of almonds this year, and we are already feeling the effects of this news on our sales of

Read "Sure Pop" Almond Hullers

which we manufacture. At the last minute there will be a rush as usual, and every one will want immediate shipment.

Are You Going to Buy a New Huller?

There is so much money tied up in complete machines that we will not finish them except on order, but we are in a position to assemble on reasonably short notice. WRITE AT ONCE for our terms and your letter will be given prompt attention. Our suggestion is that your order be placed early so that you may be sure of delivery on the date you need the machine.

PRICE LIST AND CAPACITY

No. 1—2 to 3 tons capacity, \$1250.00 f.o.b. Davis.

No. 2—1½ to 2 tons capacity, \$750.00 f.o.b. Davis. (Special picking arrangement in tailing spout, \$50.00 extra.)

No. 3—¾ to 1½ tons capacity, \$100.00 f.o.b. Davis (Note: No. 3 is a hand machine, but can be operated by motive power. It has no separating attachment, consequently the sorting must be done by hand). SEND FOR PARTICULARS AND ANY OTHER INFORMATION.

Schmeiser Manufacturing Company, Davis, Cal.

LOOK!

On two adjoining ranches under identical conditions the same amount of water was pumped. One owner used electric power. The other used a COMMERCIAL GAS ENGINE. Electric power cost the one \$1800 a year. The other bought \$400 worth of distillate and at the end of the year had \$160 worth of distillate unused, making a total power cost of only \$240, an actual instance of saving money that should make you write for further particulars. Do it now!

Commercial Engine Co.

2416-32 Porter St. Los Angeles
Branch: 1228 "H" St. Fresno

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Surface Irrigation Pipe
Is Right

then why experiment with any other.
Lasts a life time.

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Branch: 1228 "H" St. Fresno

Also, Double and Single Well Casing.

Leffingwell Heights Lemon Land

In the heart of the Whittier-La Habra frostless lemon belt.

Lemon grove adjoining this land has yielded average annual net profit of \$600 an acre.

You can get choicest selection NOW at low opening price. Auto trips from Los Angeles every day.

Call, phone or write for further information.

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Made by International Harvester Co.
16 Horse Power will run Hay Press
Thrasher - Pump - Etc.
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WRITE TODAY FOR FULL INFORMATION.

ARNOTT & CO. 112 So. Los Angeles St. Los Angeles

Economics

on the Farm

AUTO TRUCK MAKES FARMER A BUSINESS MAN

By George F. Whitsett, of the International Harvester Co. of America.

WONDER is expressed by some that motor trucks are becoming used on the farm. Many who are unfamiliar with present rural conditions imagine that development is peculiar to the city, and that farming conditions are the same yesterday, today and forever.

It is inevitable that as the nature of farming itself changes, the machines of the farm will display a corresponding change. Agricultural need always precedes the machine which fills it.

Tell me what kind of farming a man does and I will tell you what kind of delivery he uses, or will use within the next few years. The farmer who has graduated into some one of the numerous specialized forms of farming—the kinds that put fertility back into his farm and daily profits into his pockets will find motor truck delivery necessary in his business.

There appeared recently in the Pennsylvania Farmer an account of one instance of motor marketing which nicely illustrates the new regime. S. L. Kester of Clearfield County, Pennsylvania, has used a motor truck to his profit and convenience for two years in conveying his produce from Homestead Farm to market.

"He produces fruit, berries, garden products, butter and eggs," says the account. "The products are carried more safely and arrive in better condition than when hauled in a market wagon. About one-third as much time is spent on the road and one team is dispensed with. Towns that were practically out of reach by team are within easy distance of motor truck."

The writer prefaces his remarks on Mr. Kester's delivery success with this statement: "The number of users of the motor truck for marketing purposes is rapidly increasing and their success bids fair to make this method the popular one for conveying farm produce to market. As a saver of time and horses it is economical."

And this is the age of all ages, and the year of all years, when economy is an argument. With shrapnel shooting the price of horseflesh skyward the specialized farmer as well as the city merchant will listen to arguments for economy. Financial and economical crises are beneficial in that they force us to substitute for our extravagant ways methods which will stand the test of profit and loss.

When we consider the advantages of farm marketing by motor as compared to the advantages of city gasoline delivery, it is hard to see why the city man beat his country brother to the method. The man in town has better streets and shorter hauls, yet he was first to adopt motor truck delivery.

But the difference is fast disappearing. Rural competition is increasing, and ways and means for increasing the speed and decreasing the cost of delivery are becoming as popular among the orchards, lettuce fields and poultry farms of the countryside, as they are among the manufacturers, wholesalers and retailers who make their deliveries over brick pavements and asphalt.

The man who raises berries and fruit soon comes to wonder how he ever managed to stay in business with his old-fashioned methods of delivery. His motor truck enables him to rise later in the morning and get to market at the customary time. It enables him to gather his tender fruit, such as berries and peaches, in the cool of the day, and get it to market or shipping point the same afternoon. It not only moves him up closer to his customary market, but puts him within easy striking distance of other markets.

These conditions apply with equal force to the producer of truck and garden vegetables. The motor truck makes the raiser of radishes, green peas and roasting ears master of his early morning marketing. It lets him

get as much sleep as every man deserves and yet enables him to get into market before it already is glutted. It makes him independent of local buyers and enables him to go where he can get the best prices and conditions. Furthermore it enables him to get there more easily, quickly and economically.

Every man who produces milk, cream, butter or cheese to any extent is, or soon will be, the owner of a motor truck. It gives him the power and speed necessary to make quick deliveries in the cool of the day and cover, if necessary, long distances. The motor truck as now built will travel over all kinds of roads in all kinds of weather and will surmount any hill. The motor truck has become an all-year proposition and one which will relieve the dairyman of the tortures of slow and tiresome delivery.

The poultry farmer is a natural member of the motor truck club and finds that his business can be handled with alacrity and economy by the aid of gasoline. It enables him to market daily when desired and to answer and to fill special orders on short notice. It makes a full-fledged business man out of the otherwise handicapped poultry farmer.

A farmer need not be an all-fruit, all-vegetable, all-dairy or all-poultry farmer to come in under the classification of those who need specialized delivery. Being engaged in several lines of specialized farming does not keep a man from being a candidate for specialized delivery.

No one need be surprised then to observe an increase in the number of motor trucks purchased for farm use. As the kind of materials marketed changes, the means of marketing will differ. The more farmers who become engaged in specialized farming of any sort, the more farmer owners of motor trucks will there be. What is more, motor truck delivery holds as it grows. More than 99 per cent of all who take up motor truck delivery keep it up and never go back to the ways of their forefathers. The motor truck builds up the very businesses which demand it and therefore becomes a self-perpetuating species.

POINTS TO CONSIDER IN A STRANGE REGION

The man who takes up a farm business in a community with which he is not familiar is likely to fall into error on matters seemingly very simple to the residents of the region. The new man often follows the planting dates of the region from which he came, and thus the crops may be injured by early or late frosts or other climatic conditions especially prevalent in the region.

In southern New England such a case was observed the past year. A farmer new to the region, not realizing the shortness of the growing season, had planted his corn too late to mature properly, with the result that but 15 bushels were husked from nine acres and a large part of his fodder was lost by heating. This individual is there to make the farm a paying proposition, and as fast as possible is correcting his errors.

Accurate climatic data are often of great value to a farmer starting out in a strange neighborhood. Tables showing the dates of the last killing frosts in the spring and the first in the fall, together with rainfall by months and total rainfall for the region, are usually available from the United States weather bureau, Washington, D. C. These should be consulted before deciding on the crop practice for the new locality. It would be still better to obtain such information before deciding upon a locality in which to purchase a farm.

Another mistake which is often made is through the endeavor to bring the type of farming of the old region to the new location, where, in the majority of cases, not only different conditions of soil and topography prevail, but new problems relative to

transportation and market demands are met. These new conditions determine the profitableness or unprofitableness of the type for the region. The general type of soils of the neighborhood should be studied and compared with the soils of the individual farm and crops planted which are best adapted to soil and topography of the farm as shown by the general farm practice of the neighborhood. As a general rule, it is the safest practice for any farmer starting out in a new location to grow largely the same crops and keep the same breed of livestock as his neighbors, unless there is an especially good reason for following another practice. As one grows familiar with the region, experience may suggest improved methods.

If farmers, when changing to a region with which they are not familiar, would give more thought to climatic and soil requirements as shown by the type of farming and planting dates generally practiced in the new neighborhood, many hardships and disappointments would be prevented.—L. G. Howell.

AGRICULTURAL ENGINEERS

The American Society of Agricultural Engineers will meet in San Francisco, September 21, 22. The meeting will be in conjunction with the International Engineering Congress which will be held at the exposition.

Along the line of agricultural engineering, which has many lessons for visitors at the world's fair, Mr. Leonard Carpenter gives us the following hints as to some features which will be of interest to farmer attendants.

In the Palace of Agriculture are all of the machines for agricultural purposes, and to supplement these are the exhibits in the Palace of Food Products. Both of these palaces are seven and a half acres in extent of floor space and they are filled with exhibits.

Seven great manufacturing companies are showing their farm tractors. These machines are shown in whole and also the working parts are exhibited, and trained men are in all of the spaces who explain the workings of their own machines.

The Holt Company has a model farmhouse with a growing orange orchard and an attractive exhibit of their tools. The machines have been mounted so that they are shown in operation.

The International Harvester Company shows all of its tools, including tractors.

Milking machinery, dairy, barn and creamery appliances, gasoline engines, and all other farm power appliances are exhibited in operation.

There are a number of model farms. The United States Steel Corporation shows the Apollo Farm with sheet iron houses, barns and out-buildings, an irrigation system with iron flume, fences and a complete line of steel utensils.

Idaho shows the Horse Shoe Dam with real water and an irrigated farm with all of the different methods of putting the water on different kinds of crops.

The department of agriculture shows an 80-acre model farm with irrigation and the different methods of drainage. In this exhibit are also methods of construction of cold storage houses, slaughter houses and smaller farm buildings. The proper relation of fields to buildings, and buildings to the surroundings, such as roads, schools, etc., is shown in the model farms both here and in the other exhibits.

The different irrigation projects, private and government, are fully illustrated.

Many interesting types of foreign tools are shown which compare with our own makes.

SCORED FOR THE CAT

Billy has a kitten and his little neighbor has a poodle, and both little boys often quarrel over the relative merits of their pets. One morning the owner of the little poodle dog was getting the best of the argument, for his pet had a bath each day, he declared, and therefore was much cleaner than the kitten. But a bright idea saved the day for Billy. "Huh," he indignantly burst forth. "My kitten dry cleans himself four or five times a day."—Exchange.



Panama-Pacific Exposition Night Illumination. View from Main Entrance. The Jewel City is Wonderfully Beautiful at Night.

EVENTS THIS WEEK

SCIENTISTS, historians and specialists the world over are gathering. Conventions of men, conventions of women, even conventions of children continue to assemble.

August is the greatest month of all for conventions. In that month there will be 249. But July with 133 has a sufficiency, for on some days there are dozens of different conventions in session. Agriculture is coming to its own. There will be within the next few weeks 34 agricultural and horticultural conventions and in addition to these 38 devoted to live stock. Educational people seem to be the strongest for conventions for we note they are scheduled for 89 to be held within a short time. Neither September nor October fall much below July, so California is to be well conventioned this year.

Next Sunday, July 18, is Christian Endeavor Day.

Monday, the 19th is Universalists' Day, also the day of the American Asiatic Association and Evangelical Lutheran Synod, Historical Congress, International Association Rotary Clubs, Fraternal Brotherhood. On this day there will also be contests in swimming, water polo and other athletics.

Tuesday, the 20th, is Epworth League Day, American Historical Conference on Mothers' Pension Day.

Wednesday, July 21, is Electrical Contractors' Day, Physical Educational Association Day.

Thursday, the 22nd, is Cleveland Day, also the day of the National Association of the Deaf.

Saturday, the 24th, is Illinois, Utah, Detroit and National Electrical Contractors' Day.

The following week there will be meetings of the American Academy of Political Sciences, Archaeological Institute, Entomological Society, Biological Society, Mathematical Society, Society of American Bacteriologists, Astronomical Society and many other important organizations.

The midsummer season is on and the attendance is increasing with every trainload which comes in from the East.

The exposition has been giving some wonderful treats to music lovers. John Phillip Sousa and 65 musicians are charming thousands. In addition there is the Boston band with 65 players; the Philippine Constabulary band of 90, giving daily concerts, the Marine band and Cassasas Official Exposition band.

Of course there are daily recitals on the exposition's \$50,000 organ in Festival Hall; also daily concerts by the exposition orchestra of over 80 pieces.

Another musical attraction which is promised for July 21-24 is the Tabernacle Choir of Ogden, Utah. Two hundred voices under one of the best leaders promises a rare treat.

EXPOSITION POULTRY SHOW RULES

Entries for the poultry show to be held at the exposition November 18 to 28 will be received and cooped for exhibition on November 16 and 17. The exhibition period and time occupied in judging and reshipping the birds will be from November 18 to 28. Entries close on October 15 so all breeders should decide on the number of cocks, hens, cockerels, pullets and pens they wish to enter before that date. It is not necessary to decide on the exact individuals, but exhibitors should decide on the number and sex and select new bands to be put on them at the time of shipment.

Entry Fees

A fee of \$1.50 for each single and \$4.00 for each pen will be charged to cover the expense of receiving, cooping, feeding, watering, exhibiting and returning the birds. Breeding pens will consist of one male and four females and birds entered as singles cannot compete in pens. Entry blanks can be secured from the department of live stock.

Prizes in the poultry classes will be paid in full where there are four or more entries in a class, and where there are less than four, second money will be awarded to first prize winners.

On all breeds and varieties of poultry recognized in the 1915 edition of the American Standard of Perfection and including guineas and pheasants the following prizes will be awarded:

Cock, hen, cockerel and pullet, to each five prizes, 1, \$5.00; 2, \$4.00; 3, \$3.00; 4, highly commended, 5, commended. Breeding pen, to each five prizes, 1, \$10; 2, \$6.00; 3, \$4.00; 4, highly commended; 5, commended. Ribbons will be given for each award.

One pea fowl, one male and not less than four females, 1, \$35.00; 2, \$25.00; 3, \$15.00; 4, highly commended; 5, commended.

Ostriches, one male and not less than four females, 1, \$100; 2, \$75.00; 3, \$50.00; 4, highly commended; 5, commended.

A utility department will be maintained at a fee of 50 cents per bird. Everyone entering in this class must certify that entry has been bred from pure bred stock.

Fruit growers and nurserymen will have their meeting at the exposition or near there, during the last of July and the month of August. In July the State Fruit Growers will convene at Palo Alto. One feature of this gathering is a day at the Exposition. In August, occurring in the order given, will be the Thirteenth Annual Convention of the Pacific Coast Nurserymen at the auditorium; the Fifth Annual meeting of the California Nurserymen, also at the auditorium; Nurserymen's Day at the Panama Pacific, the 16th; later the annual meeting of the American Rose Society, Society of American Florists, National Association of Gardeners, American Association of Park Superintendents, and finally the Thirty-fourth Biennial Convention of the American Pomological Society. Specific dates and outlines of programs will be given on this page.

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Representing

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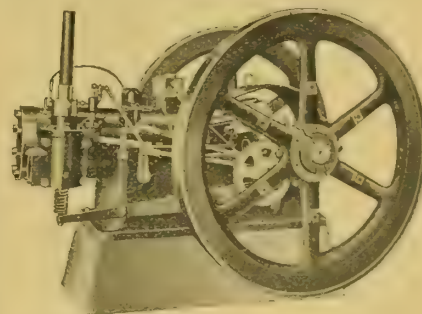
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—all of sections 7 and 45, facing main entrance from the water side.
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Abjoining Cuban Gardens, which are under the Big Glass Dome.

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Be sure and see the famous Luitwieler non-pulsating pumping system at the fairs. Write for free pumping booklets.

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Twenty thousand ripe cantaloupes were distributed at the San Diego exposition on July 3.

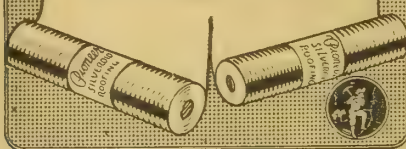
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In large or small quantities, 40 species to select from. Write for free pamphlet, "Eucalyptus Culture." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc.

Trial packets 15c each, 4 for 50c. Write for prices in quantity.

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345 S. Main St., Los Angeles, Cal.

GIANT WINTER RHUBARB

Special Prices on Subdivisions
for Short Time

Season of 1913-14, from 5% of an acre set out in June and July, 1913, I sold \$673.70 worth of stems.

Now is the time to plant. Booklet free.

W. A. Lee, Covina, California

General Agriculture



THE WEED CAMPAIGN IN KERN COUNTY

IN 1912 a campaign was begun by the horticultural commissioner against some of the most troublesome weeds in the county. At all times it has been the aim of the commissioner to make it an educational and cooperative one, rather than one forced upon the people. At first a large amount of the work was done only to comply with the requests of the commissioner, thinking it would be dropped in a few years, as the squirrel campaign was handled, but since it is being continued the people are now working to permanently eradicate the weeds.

The county was divided into districts, and in each one an inspector was appointed, who makes a thorough canvass of the district, not only notifying the farmers to rid their land of the weeds, but explaining to them the most effective methods of doing so and the importance of the work. The weeds included in the campaign are: the Russian thistle, ground bur nut, sand bur grass and the springy cockle bur.

The Russian thistle, one of the most persistent pests the farmer has to deal with, is found generally throughout the county. It is a serious pest in cultivated crops, but in grain and other uncultivated crops it has no equal, not only crowding out other growth but utilizing the moisture and plant food which is always needed in the grain field. The weed is a dry weather plant which shows up late in the spring, quickly maturing its seed, then in the fall breaking loose from the root and rolling before the wind, spreading the seed broadcast. It is one of the most common weeds along the railroad right-of-way throughout the country, yet they have done as much or more than anyone else in the control of the weed. They have repeatedly cut it each season, but have neglected to thoroughly do the work, especially on the later crops of the season.

The control of the weed is not difficult providing all work is thoroughly done and before any seed has matured. All people in a district must cooperate, for one patch left to mature a crop will reseed all adjacent land. Rotation of crops, clean cultivation, especially along fence lines, roads and all waste places, is very effective. Where hay and grain are grown exclusively the problem is more complicated. After removal of the crop the ground should be cultivated by shallow plowing if the seed has not already matured, but if it is already ripe the only method would be to burn it to prevent it from blowing on adjacent lands, and the next season summer fallow followed by summer cultivation. Where it is found on uncultivated lands where there is a growth of foxtail or other wild grass, burning over the land before the seed has matured, and then cutting any that failed to burn will control the weed.

The ground bur nut, locally known as puncture weed, is another serious pest the farmer has to contend with. It also seems to have spread along the railroad and from there on to the adjacent lands. It is not a serious pest in cultivated fields but is a menace to alfalfa growers. The weed growing close to the ground, similar to wire-weed, makes cutting with a mowing machine impossible, but when the hay is raked the weed is picked up and the burs do large damage in the mouths of stock. It is a serious pest to sheep men, the burs getting into the wool, causing great loss. This being an annual weed it is quite easily controlled in cultivated fields by the regular cultivation, but should be prevented from getting into the alfalfa fields. As a pest along roads, ditch banks, and fence lines it is one of the most serious and should be cut before the seed is

matured, and above all things see that the work is thoroughly done.

The sand bur grass is a common weed throughout the irrigated districts, especially in the light sandy soils. Irrigation water is the one factor in spreading this weed, it growing profusely along the ditch banks and checks where it is spread very rapidly. It first must be cleaned up here before any field work is done if results are to be obtained. The weed problem will be solved when a better system of ditches is obtained, either cemented or oiled, preventing the rank growth of weeds along the banks and preventing sub-irrigation which does great damage in many of the districts.

The spiny cockle bur, while a very serious pest, is fortunately not widespread throughout the county and has a tendency to grow in the wetter lands. It is an annual weed, not very prolific in the production of seed, so is quite easily controlled.

The people should clear the weeds from their land and from all their ditch banks and then insist that all other land owners and the canal companies do the same. The support of the people is what is needed. Clear your land of the weed and insist that others do the same. The commissioner is assisting as far as possible in seeing that all lands are cleared and in making inspection of all incoming seeds to prevent the further introduction of weed pests.—Kern County Farm Bureau Monthly.

CACTUS

In a letter from Mr. C. D. Cummings, who has had much experience in growing thornless cactus, he calls attention to its value as a conditioner and feed for live stock, and to the fact that where it has been added to the ration of cows and hogs they have yielded most satisfactory production.

In addition Mr. Cummings says that in his own experience he has found it to be a most palatable fruit for the table, being both healthful and nutritious.

While the cactus is a native plant of the desert region I find that the domestic cross-bred, improved varieties thrive just as well in the northern part of the state as in the South.



ROBUSTA CACTUS.

Remarkably Thrifty Grower of the
Thornless Type.

They grow fully as prolific in the Sacramento Valley as they do around Los Angeles and San Diego. The better the soil the greater the growth, and they will thrive anywhere where the temperature does not fall below 14 or 15 degrees above zero. At this place, Los Altos, just south of Stanford University, when orange and lemon trees were frozen two years ago the cactus were not hurt at all. In fact they have never been touched by frost here in the five years I have been growing them. They will also grow as far north along the Pacific coast as Oregon and Washington, most of California, Arizona, New Mexico and Southern Texas, and in Louisiana, Florida, and all along the Gulf

and Atlantic coast of the United States well up into South Carolina.

STUMP BLASTING

Stumps offer the same impediment to cultivation and crop production as boulders, and their removal is just as important and necessary. Many thorough tests, covering a long period of time, have proved that the cheapest, quickest, most economical and most satisfactory means of ridding a field of stumps is by the rational use of dynamite. In swamps or wet places where stumping by other means is practically impossible, good results are obtained by blasting, no matter how wet the soil may be or how large and heavily rooted the stumps are. For blasting the several kinds of stumps, it is necessary to load them with special regard to their root systems.

Blasting Tap-Rooted Stumps

Trees similar to the pine, when not interfered with by hardpan, usually send down heavy tap roots. For blasting these, the best method is to start a hole in the ground some distance away from the stump so that it will reach the center of the tap root about fifteen to eighteen inches below the surface of the ground; or deeper, if the nature of subsequent tillage will be interfered with by fragments of stumps or roots left in the ground at this depth. Then using a wood auger, bore a 1½ or 2-inch hole about three-fourths of the way through the root, and load it with dynamite of 40 per cent strength.

As the loading of such stumps will vary considerably, due to the variations in the toughness of the roots, their state of preservation, whether green or somewhat decayed, and the resistance offered by the soil in which they grow, no set rules can be laid down for the amount of dynamite needed for any given size of stump. Fresh green stumps are much harder to blast than similar ones that have been cut for a year or more. The only way to gauge the loading is by experience. Try a few, loading the first one heavier than you feel necessary and later cut down the amount of dynamite used until there is no overloading. It is better to overload a stump slightly than to underload it, for when a stump is once shattered by a charge not large enough to lift it out of the ground, portions of the stump and root are left clinging in the hole and are removed with difficulty.

The novice should begin on the small stumps and work up to the large ones. Take a stump about twelve inches in diameter at the surface of the ground, and start your hole back about fifteen inches, boring to within three inches of the far side of the root. Load this with two cartridges and carefully note the results. If the loading is too light, try more dynamite in the next one; if too heavy, try less.

Blasting Small Fibrous Rooted Stumps

Some classes of forest trees are supported by stumps having no tap root but many heavy lateral roots. These can also be blasted easily. For such a stump the method of loading is to punch a hole under the stump at an angle with the surface of the ground to a depth of about 18 to 24 inches. This hole should be so placed that the major portion of the dynamite is directly under the heaviest part of the stump, and should ordinarily extend decidedly more than half-way under the body of the stump, in order to avoid danger of loading a blast too near the side, and lifting out only a part of it and its roots.

Blasting Large Fibrous Rooted Stumps

When stumps are too large to be successfully blasted by a single charge, the method of loading should be modified as follows: A hole is put down under the stump and loaded as described for small fibrous-rooted stumps, the only difference being that an electric fuse is used instead of the cap and fuse. Additional holes are punched under the large roots and loaded with small charges, each primed with a fuse. The wires are then connected and the shot is fired with a blasting machine.

This method of loading is also recommended for blasting second growth stumps and those having hollow centers, for with such stumps a single charge is quite likely to split the stump without lifting it out.

Stumping in the Orchard

When removing diseased or unprofit-

able trees from the orchard in order to set new ones, all stumps should be blasted out, for by this method they are most economically removed and suitable holes are made for setting new trees.

General Rules for Clearing Land

Most stump land contains stumps of varying sizes from small to large. Where large tracts are to be cleared a good plan is to first blast the small stumps by means of cap and fuse, where only one bore hole is necessary. After this is done the land can be gone over once more, using the electric method of blasting to remove the large stumps where it is necessary to use more than one bore hole to get the best results. A well-trained crew of three men, consisting of a blaster and two helpers, can remove a large number of stumps in a short time. The method is as follows:

The two helpers will start boring holes under the small stumps requiring only one hole. The blaster starts making his primers. When he has made ten or more primers, as the case may be, he begins to load the holes. Loading and tamping can be done much faster than the boring. When the blaster catches up with the helpers who are boring the holes they stop, and all three light the fuses in the loaded holes. When the shots are fired the helpers start boring more holes and the blaster begins to make up a new lot of primers. This system will enable a very large number of small and medium-sized stumps to be taken out in a minimum amount of time, provided the work is not so wet as to make the use of caps and fuse inadvisable. After an acre or two have been cleared up the man can start taking out the large stumps requiring two or more holes by the electric method, if enough be present to warrant the expenditure necessary for the electric equipment.

GROWING ALFALFA SEED

Written for California Cultivator
By J. M. Bomberger

My experience and observations lead me to believe that alfalfa seed may as a rule be successfully grown wherever the alfalfa plant grows well. In my opinion the most important factor in it is the maintenance of the proper proportion of sunshine and soil moisture. Comparatively dry land is usually considered best for growing alfalfa seed, because on such land the alfalfa does not grow so rank as to shut out the sunshine.

On the other hand the best and most profitable crop of alfalfa seed that I have ever seen was grown on very rich, well sub-irrigated soil. On this particular field the stand of alfalfa was very uniformly thin. The alfalfa plants grew very large and rank, but they were just far enough apart to admit plenty of sunshine. I have seen alfalfa plants scattered along a drain ditch, that grew to immense size and seeded heavily. They must have had their toes in the water, but there was plenty of sunshine and they seeded heavily.

A rich, moist soil is not a handicap in growing alfalfa seed if the plants are far enough apart to admit plenty of sunshine; but there is danger in some cases of weeds filling in the open spaces between the alfalfa plants. This might suggest planting alfalfa in rows on such land and cultivating between the rows.

As to which crop is best to leave for seed: If the stand of alfalfa is very thin or if the land is likely to become quite dry early in the season the second crop would be the most profitable, but as a general rule the third crop would be the best to leave for seed.

The watch word in growing alfalfa seed is "sunshine."

CALIFORNIA'S MAGAZINE

One of the most beautifully printed books we have yet seen touching upon California and its attractions is the cornerstone number of "California's Magazine." It is certainly a great credit to the California printing industry. The book is well edited by Prof. E. J. Wickson, and is filled with articles written by specialists. These touch upon the educational side of California, its natural resources, development, plant breeding, waterways, expositions, California's women, California fruits, cooperative marketing, field

products, live stock, food manufacture, the poultry industry, and numerous other factors entering into California's greatness. There are many colored plates showing the perfection to which engraving and printing has been brought. Those of the Panama-Pacific exposition are wonderfully true in color and give an excellent idea of the great exposition.

The book is one which every admirer of California will be glad to send to his friends in the East. There are nearly 700 pages and hundreds of illustrations. Its price is \$1.50. The publisher is the California Publishers' Cooperative Association, New Call Building, San Francisco.

EUROPEAN BEET-SEED INDUSTRY

By Commercial Attache Erwin W. Thompson, The Hague, Netherlands

Many Americans may have wondered why, with the large acreage under sugar beets in the United States, the seed is not raised there. The answer to this is that when beets are grown for sugar they are not permitted to go to seed. The raising of seed is an entirely independent industry and calls for a different kind of talent.

The present sugar beet has been developed by cross-fertilization from an original stock yielding 6 or 7 per cent of sugar up to the present yield of about 15 per cent. This industry has reached its highest development in Germany, where about 50,000 acres are annually planted in beets for the exclusive production of seed. From this area are gathered some 40,000 tons of seed, 10,000 tons of which are used within the empire for planting the area (over 1,000,000 acres) for the production of beets to be used for making sugar; the remaining 30,000 tons are exported. In the calendar year 1913 Germany sent to the United States 5856 metric tons (12,910,300 pounds) of beet seed. Germany produces 2,000,000 to 2,500,000 tons of beet sugar per year and exports about 1,000,000 tons.

Holland's Unique Position

The Netherlands plants about 150,000 acres in sugar beets, which produce about 250,000 tons of sugar, but does not raise any beet seed that enter into commerce. Indeed, that country does not produce the seed used for its own plantings, but has a highly specialized though small industry for the development and production of what might be called "mother beet seed;" that is to say, seed raised for use in planting beets to produce commercial seed. These mother beet seed so produced are carefully examined for germinating qualities. The beet roots that produce them are analyzed from time to time during growth to determine the percentage of sugar, so that in the end only those seed are propagated which show the highest percentage of germination and which are grown on roots producing the highest percentage of sugar.

Much of the mother beet seed produced in Holland is sold to growers of seed in Germany, and large quantities of the commercial seed raised therefrom in Germany are returned to the growers of sugar beets in Holland.

REPAIR YOUR TIRES

"By repairing your cuts you cut your tire bills," says R. S. Wilson, manager of the service department of the Goodyear Tire and Rubber Company of Akron, Ohio.

"A little glass cut, a nail hole, or any abrasion that penetrates the rubber tread to the fabric of the tire, opens a way for dirt and moisture to creep in. In many an apparently perfect tire, when removed from the wheel and deflated, is found a loose tread under which are dirt and moisture, rotting the fabric.

"If you have ever found a tire in this condition you know you have had a strong temptation to call it defective. Did you ever select a nice, rosy apple, apparently a perfect specimen, and discover after the first bite that it was pitted with worm holes? If so you were tempted to call it a poor apple and yet generally investigation would have shown somewhere, down on the side, a small hole where the worm crawled in. Almost without exception the tire having a loose tread and rotting fabric is no more at fault

than the apple into which the worm bored its way. As the tire revolves a suction is produced which draws particles of dirt into the cut. Gradually these particles work under the rubber, grinding and cutting it from the fabric. If neglected this grinding process will work around the tire and separate the whole tread from the fabric. The fabric under the tread soaks up some of the moisture, which causes it to weaken, and a blow-out soon follows.

"A tire cut is the most common and most destructive of all tire troubles and yet is the easiest to remedy if taken in time. It is a good plan to look over your tires every few days. It will pay you to repair any cuts however insignificant they may appear.

"You can do this quickly by cleaning out with gasoline and filling in with repair gum. A can of this is inexpensive and may save many dollars worth of tires and lots of trouble. Rapid deterioration invariably follows a neglected cut."

ELECTRICITY ON THE FARM

Electricity finds a most useful and beneficial application in the farm home for lighting, heating and small motor service. This is quite apart from the now well recognized service as a general utility motive power for outside operations, such as those in the field, barn, dairy, shop, etc. In the newer conception of farm life betterment it is the home and fire-side that require first attention.

As the sewing machine has replaced sewing by hand, so the small electric motor is replacing the foot-power drive. For instance, one cent's worth of electricity at rate of charge of 10 cents per kilowatt hour, will operate an ordinary household sewing machine for two hours and do 30,000 stitches. It was said that each Greek in the olden times required at least six slaves to work for him. How insignificant the twelve hands compared to the simple and direct application of electricity to such a common operation as sewing. And the cost of maintenance of six persons sewing for 10 hours would far exceed one cent.

The same advantages are to be seen in all the other varied demands of the farmer's home for power, as in pumping, laundry, refrigeration, grinding, etc.

In the matter of heating by electricity, moreover, the applications are fully as numerous and economical. One cent will bring to a boil one quart of water and a very small additional allowance will keep it at the boiling point for a long time. One cent's

worth of heat will operate a six-pound flat iron for fifteen minutes or a chafing dish for twelve minutes.

Next, consider the comfort, convenience, safety and security from electric lighting, as one cent will operate a 16-candle power lamp for five hours; and smaller sizes proportionately a longer time.

Electricity in the farmer's home, therefore, reduces the drudgery, as it is called, and makes rural life livable. With the telephone adding a social feature to the preceding economic consideration, it is evident that the day is not far distant when it will be more of a realization than ever before, that the best home life is to be found on the farm, the ranch and in healthful rural environment.—Wm. S. Aldrich, Colorado Agricultural College, Fort Collins.

AGRICULTURAL LABORATORY MANUAL

"Agricultural Laboratory Manual, Soils," by Edward Scott Sell, published by Ginn & Company, Boston, 35 cents.

This is not a text book or discussion of soil conditions but a book of exercises adapted to high schools, especially agricultural high schools and normals. It is intended in fact to be used with text books. It covers such subjects as the origin and structure of soils, soil moisture, soil temperature, crop rotation, fertilizers, bacteria, and tillage. Many of the exercises are to be done in the field so that principles taught in the laboratory may be verified under field conditions.

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The war conditions are bringing about a more general discussion of the ability of this country to produce its own. Every day brings to light some new product we have been importing which we could well produce in this country. Of course it is usually some thing that requires cheap labor. With America's inventive genius these difficulties may be overcome, at least as to some of the industries. One of our heavy imports, according to state-ments sent out by the department of agriculture, is that of flax in its various forms. We import over \$3,000,000 worth of fiber annually. We also import over \$20,000,000 worth of linen goods. About one-fourth comes from Russia, another fourth from Belgium, but most of our linen comes from Ireland. The department adds "There appears to be no reason why American grown fiber and American manufac-tured linens should not be substituted for at least a large part of these im-ports." The growing of flax and the preparation of fiber requires more or less technical knowledge, but as a rule Americans are able to secure the tech-nical knowledge if it can be shown that there is profit in any industry.

OLEOMARGARINE

Officials connected with the fed-eral treasury estimate that the govern-ment has lost at least \$27,000,000 in stamp and special taxes through frauds by oleomargarine manufacturers. Arrests have been made and fines to the extent of \$48,000 have been im-posed and nearly a dozen other viola-tors of the law are awaiting trial. Pre-sumably it will be a long, long time before the trials of these men are finished and the imposed fines fully collected. Meanwhile oleomargarine

has been manufactured and disposed of as a dairy product. We can have no objection to the manufacturers selling oleomargarine if it is done honestly and squarely on its own merits and not on the merits of the dairy industry. The extent of this industry is indicated to a degree by the fact that the loss from revenue is so great. It means that the con-suming public had been deceived into buying oleomargarine, because it is plain to everyone who has visited stores of various types that oleomar-garine as such is seldom sold. The law was enacted by congress to pro-tect the dairyman. It is apparent that the only effort to protect him was to enact a law and allow it to enforce itself. We hope that something be-sides "imposing" fines will be done to punish these violators of the law.

APPLE GROWERS ORGANIZE

The Watsonville Apple Distribu-tors is the name of the newest cooper-ative marketing organization in the state. The work of bringing the apple growers of the Pajaro Valley under a definite form of organization has been under way for some time, but within the past few weeks the organization has been perfected, and the campaign is still on for new members. There have been several mass meetings at which grower and packer have united in planning for more satisfactory re-turns for their fruit for this season and for the other seasons to come. At a recent meeting delegates were present from other near-by sections, and it is now assured that the greater part of the apple crop of Santa Cruz and Monterey Counties will come un-der this organization. At this meet-ing the state horticultural commis-sioner was present and gave an ad-dress touching upon the pests affect-ing fruits of the Pajaro Valley and emphasized the necessity for only the most perfect pack being sent out. Regarding the new standard apple pack it was recommended that the law be obeyed to the letter. This involves reducing the size of the box used heretofore in the Wat-sonville packing houses. The objec-tion to the Watsonville box now is that it contains 27 cubic inches more space than the box provided for in the standard apple box bill.

The past year has been a trying one upon the apple grower, and the next does not look as bright as de-sired. However, with this organiza-tion and with efficient methods of handling fruit we believe there will be better returns.

STATE CONVENTION

The program of the 46th State Fruit Growers Convention was given in last week's Cultivator. Every fruit grower in the state will find on that program something that will be of most intense interest to him. The convention is to be held at Stanford University at Palo Alto. Sessions will begin on Tuesday evening, July 27, and continue until the evening of Friday, July 30. The next morning the delegates will leave for San Francisco to spend the day examin-ing the horticultural exhibits at the exposition and in the evening listen to addresses in Festival Hall.

The convention offers an opportu-nity that may well be taken advan-tage of by fruit growers even from the most distant parts of the state, for with it is an inspiration, and a few days spent at the exposition will give more information of value

to the grower than may often be secured.

In connection with the Fruit Grow-ers Convention will be held a potato growers convention, or rather, it will be held the two days preceding, al-so at Palo Alto.

As usual the state convention of county horticultural commissioners will also assemble at the same time and place. Probably every county horticultural commissioner in the state will be present, as will also nurserymen who are interested in the horticultural laws and in the methods of their enforcement.

Several bills were passed at the recent legislature which it will be well to discuss at this convention.

AGRICULTURAL SOCIETY

At the Los Angeles meeting of the State Fruit Growers, held last November, steps were taken for the organization of a state horticultural society, or possibly a society which should be more general in its scope. A committee was appointed to con-sider the suggestions made, and this committee recommended that a per-manent committee be appointed to investigate as to the advisability of such organization. That committee later convened in Sacramento in the office of the state horticultural com-mission, and it was the unanimous opinion of the committee that there is an opening in California for a large representative organization which shall have to do with all class-es of agriculture, but being appoint-ed by the officers of the State Fruit Growers Convention it was deemed wise to ask the stock growers and others to unite in the forming of this society. A meeting was called, ask-ing for delegates from every agri-cultural organization in California, to be held at the exposition grounds at San Francisco on February 22. At that meeting were present repre-sentatives of nearly every section of the state and of nearly every branch of agriculture. This meeting as like-ise unanimous in the belief that the time was ripe for the perfecting of a general organization of agricultural interests. It was left to the chair-man of that meeting to appoint a committee to recommend to the next State Fruit Growers Convention at Palo Alto a definite plan of action and constitution and by-laws for such an organization.

This committee, consisting of Prof. H. E. Van Norman, Geo. H. Hecke, Guy H. Miller, Prof. H. J. Webber, C. Thorpe, Geo. C. Roeding and Chas. A. Kimble was appointed and will hold its first meeting in connection with the State Fruit Growers Con-vention at Palo Alto, July 27-30.

The exact form of this organiza-tion—if it is perfected—can only be hinted at, for there are some who believe it should be a representative body controlled by delegates from organized bodies, and that the organi-zation should be supported by the bodies whom it is to serve. Others feel that its membership should be personal and organized on the broad principles of encouraging and caring for all kinds of agricultural activities whether organized or not.

It is an ambitious plan and one which has grown out of a suggestion that a state horticultural society was a crying need of the state. Such an organization will be entirely new, for we believe no other state affords a precedent. California is nothing if not new, and it has sufficient enthu-siasm, ability and initiative to plan for the formation of such a body.

Agricultural Notes

Holland suffered severely in her bulb trade this past year. The pro-hibition of entry of bulbs to the mails in the United States has worked a great hardship on the growers.

The first shipment of watermelons from Sonora, Mexico, was sent to the California market on May 13. The melons were grown by Chinese farm-ers in a small river valley in the south-ern part of the district.

Citrus growers in South Texas have petitioned the United States govern-ment to send an expert to that sec-tion to help the citrus growers pack their oranges, grapefruit and lemons this year. It is expected that their crop this year will reach 1000 car-loads.

By an order, on April 27, 1915, every package containing eggs imported into or passing in transit through Canada must be plainly marked with the word "Produce" and the name of the coun-try from which directly imported, the marking to be done under the super-vision of a customs officer at the ex-pense of the shipper or importer.

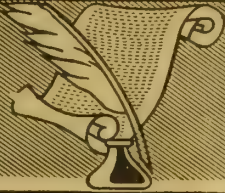
Reports from Buenos Aires show that the wheat exportation from Arg-entine for the first four months of the current year was about double that of the same months of the pre-ceeding year, amounting to over 1,500,000 tons. Oats, corn and flour also show a large increase in the current year when compared with the same months of last year, while frozen meats and wool show a decline in quantity, but an increase in price.

The Brazilian press expresses the opinion that the 1915-16 coffee crop of that country will be large, and with the usual markets in Germany, Aus-tria-Hungary and Turkey cut off, there may be difficulty in marketing the en-tire crop at present prices. This leads to the suggestion that the valoriza-tion policy may be persevered in with a loan from the federal government guaranteed by the surtax now set free by the sales of valorization stocks at Hamburg and Antwerp.

Drouth in Australia, combined with the fact that the butter supply of that country is being shipped to England during the war, has opened a new market for California butter. For 60 days California butter has been shipped to the antipodes in quarter-million pound lots. With the sailing of the steamer Ventura on July 10, the amount will total over 2,000,000 pounds, valued at \$520,000. In years past this state has received an im-port of 2,000,000 per year, which served as a check to strong prices for butter and butter-fats. The present price of butter, 26 cents per pound, is largely due to the Australian ship-ment.

One of the most interesting develop-ments of the European war has been the unprecedented growth of South Africa's wool trade with the United States. While there have been occa-sional shipments of wool to America in the past, sales have been comparative-ly small because of the shortness of the fiber. With the cutting off of Ameri-ca's supply of foreign wool through the usual channels, and with the adap-tation of weaving machinery to short-fiber wool, a market has developed in the United States that has proved of great help to the sheep men of South Africa. During the present season American buyers have been heavy pur-chasers of fair to good grade wools; such purchases will probably aggre-gate \$5,000,000.

Agricultural News Notes



of the Pacific Coast

Northern California

Bartlett pear shipments are increasing in volume daily.

The State Fruit Growers' convention will meet at Palo Alto July 27 to 30.

According to latest registration reports Nevada County has 223 automobiles.

Mr. Marsh at Santa Rosa is finding fine results from Imperial prunes planted in dynamited holes.

Three salmon canneries are now operating at Requa on the Klamath River in Del Norte County.

The dry milk plant of the Central Creamery Company in North Ferndale, Humboldt County, suffered a \$25,000 loss by fire recently.

More than 200 Rambouillet sheep were lost by one sheep owner at Woodland, Yolo County, through some unknown infectious disease.

Thirty-seven rice growers of rich-valley district of Butte County have been enjoined from draining their lands in such a manner as to overflow or seep onto lands of neighbors.

Government buyers of mules for use in the Philippines have been active in the vicinity of Arbuckle for several days, about 100 head already being purchased.

Big preparations are making for the sixth Gravenstein apple show at Sebastopol, August 14-22. J. P. Kelly of Sebastopol is secretary of the show association.

Sixty-eight per cent of normal is the estimated apple crop for Northern California with the exception of Glenn, Yuba and Sacramento Counties, which are estimated at 100.

More than \$500,000, it is estimated, will be saved to California shippers of dried fruits by the reduction in freight rates authorized June 24 by the interstate commerce commission.

The International Viticultural Congress met on the exposition grounds at San Francisco July 12-13. Many vineyardists were present from other states of the Union and from several foreign countries.

Governor Boyle of Nevada has issued a quarantine proclamation forbidding importation of bees from California unless examined for American and European foul brood and passed upon by inspectors.

The cow testing association, with headquarters at Gridley, covers a territory including Butte, Yuba and Sutter Counties. Ten of the cows tested showed over 50 pounds butter fat during the month of June.

Farm Adviser Frank F. Lyons of San Joaquin County last week addressed members of the North San Joaquin chamber of commerce at Lodi on grape mildew, using for the first time a new stereopticon outfit to illustrate his talk.

At the recent meeting of the Woodland unit of the Yolo County farm bureau a letter was presented from Humboldt farmers asking as to the possibility of Woodland alfalfa growers supplying them with hay. A committee was appointed to make a thorough investigation of best routes for shipping and rates.

Central California

Rochdale stores of Stanislaus County have failed.

The planting season for citrus trees in Tulare County is practically ended.

The California Cured Fruit Exchange now has 25 local associations over the state.

Beans grown in young lemon orchards have been demonstrated to be very profitable in Porterville.

The opening top prices for wheat from Tulare Lake lands this season is five cents higher than last year.

San Francisco sheep buyers in the San Joaquin Valley say that sheep are in especially fine condition this year.

The Cooperative Poultry Association at Visalia is planning to put on an auto delivery to handle the local trade.

The Porterville Citrus Association is planning additions and improvements to its packing plant to the tune of \$9000.

The Fresno Raisin and Fruit Products Company will handle Kings County peaches this year. It will dry Elbertas, Muirs and Lovells.

Manager James Madison of the Associated Raisin Company, is urging grape growers not to spoil the raisin market by drying wine grapes.

The Northern California Citrus Growers is the name of the recently formed organization in Tulare County. Fifteen hundred acres are now represented by the membership.

Pajaro Valley apple growers have organized an association to perfect the packing, shipping and marketing of their fruit. It will be known as the Watsonville Fruit Distributors.

Merced sent out its first carload of green tomatoes to the Seattle market the last week of June. Several carloads of onions were also shipped to Northwestern markets the same week.

What will be one of the finest dairies in Central California is being developed west of Porterville by Sampson and Denny, who have invested \$50,000 in alfalfa land and are constructing buildings at a cost of \$100,000.

Programs for the sessions of the International Irrigation Congress in Fresno, Stockton and Sacramento, in September, have been drafted by the California board of control. The congress will meet in Fresno September 15, 16.

Kings County has enacted a drastic ordinance for control of hog cholera. It provides that ranches where cholera exists must have signs posted informing the public of the fact, also ranches where hogs have been vaccinated with hog cholera virus must post signs.

Reduction in carload freight rates on dried fruits from California to all points east of Colorado was announced on July 1st by the Southern Pacific. The reduction amounts to 20 cents per 100 pounds, and was made to compete with water rates through the Panama.

The Tulare County Growers' Association, with a canning plant at Porterville, announces ample fruit signed up for the season's work. It is also announced that half the output for the year has already been sold. Only the two fancy grades of fruit will be put up owing to the large crop.

Southern California

Orange County expects to have a walnut crop 25 per cent above normal.

A shipment of 750 bales of cotton was made last week from Calexico to New Orleans.

Twenty-nine cars of Valencia oranges were shipped out of the Ojai Valley of Ventura during the month of June.

Deciduous fruit growers of Hemet and San Jacinto are urging the establishment of a cooperative cannery at Hemet.

Governor Johnson has signed the pure milk bill by which \$10,000 is appropriated to establish a bureau of dairy inspection.

The output of the Ventura County Cured Fruit Association this season is estimated at 700 tons. Last year's output was 1000 tons.

The Villa Park Orchards Association of Orange County has just paid out to orange growers a total of \$44,000, this being the returns for the May pool.

The Pomona Valley Poultry Breeders' Association held a picnic Friday, July 2, at Ganesha Park. Membership in the association is open to all Pomona valley poultry growers.

The Beaumont Fruit Growers' Association has levied on all members an assessment of 50 cents per acre on bearing orchard and five per cent on net proceeds of sales made through the organization.

Farm Adviser Parker of Ventura County has established a demonstration plot in the apricot orchard of George Weddenhofer on Ventura Avenue, where he will treat with ammonium sulphate trees affected with little leaf.

Corona has been chosen as the location for the by-products plant of the California Fruit Growers' Exchange. The plant has been capitalized at \$100,000, subscribed by lemon growers affiliated with the fruit growers exchange.

The Lima Bean Growers' Association has suspended business for one year. This is pursuant to the decision announced by the directors some time ago that unless 50,000 acres was signed up by July 1 the association would discontinue.

The Yorba Linda Citrus Association has petitioned for an order dissolving its incorporation. The association has found that it needs a capital stock corporation to properly conduct its work. The members expect to reincorporate with a capital stock of \$75,000.

The bureau of chemistry has decided that the word "lima" may be used only for beans of the species *phaseolus lunatus*. Beans of other species have recently been imported under the name of lima, qualified by such terms as Manchurian, Korean and Japanese.

Ventura apricot camps are overcrowded with women and children seeking work. It is stated that Los Angeles employment agencies are posting bulletins that more people are wanted in the orchards and the Ventura people are sending requests that no more help be sent to them.

The Coast

Portland reports some sales of new crop hops at 14 cents.

Many contracts have been made for hops on the Oregon market at 12 cents.

There has been a slight decline in all live stock prices in Northwestern markets.

The July meeting of the Arizona State Poultry Association will be held July 20.

Lewiston, Idaho, expects to harvest its wheat crop at least two weeks earlier than usual.

The Lewiston district of Idaho shipped 55 cars of Bing and Royal Ann cherries for the season.

Tomato growers of Eastern Texas have suffered heavily from blossom rot and devastation by worms.

The grain harvest in Whitman County, Washington, is already started. The prospects are for a big crop.

Skagit County, Washington, reports the driest weather for many years and stock feed getting very short.

Roswell, New Mexico, reports 4,000,000 pounds of wool stored to date. This is nearly 1,000,000 pounds above previous records.

It is reported that the Norwegian government has just purchased a million and a quarter bushels of wheat in Northwestern ports.

The Angora goat industry of New Mexico is said to be in a more flourishing condition than ever. Growers confidently expect mohair to reach \$1.00 a pound.

The weeds have it their own way in Okanogan County, Washington, this past season as the rains have been so continuous the farmers have had no chance to cultivate.


Tidelands of Pacific County, Washington, are being used more extensively than ever for pasturage. A project is being considered for diking one of the rivers to extend pasture land.

Arizona has 1,761,000 sheep, most of them the so-called native stock. Many additional prizes will be offered for sheep at the state fair this year. A distinct effort is being made to encourage introduction of better breeding stock.

Actual construction has begun on the government's Alaskan railroad. The engineering commission has established its base of operations on Ship Creek, Cook's Inlet, and is building wagon roads and landing materials and supplies.

Leland S. Parke, state club agent of Arizona, in charge of boys' and girls' club work, has been holding a number of canning demonstrations throughout the Salt River Valley. Anyone interested in the work may address Mr. Parke at the University of Arizona, Tucson.

Cantaloupe growers of the Salt River Valley have been observing with much interest the work of the office of markets of the United States department of agriculture in the Imperial Valley of California and the Phoenix chamber of commerce has written to the department at Washington asking for assistance for Arizona cantaloupe men.



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Live Stock and Dairy

GRAIN FEEDS WITH OAT HAY FOR DAIRY COWS

A RANCHER at Monterey writes that he has a large crop of red oat hay which he values at \$8.00 per ton loose, which he wishes to use for roughage for dairy cows in a ration with dried beet pulp and asks what our suggestion would be for a ration composed of red oat hay at \$8.00 per ton, dried beet pulp at about \$23.50, and for a suitable concentrate to balance the ration so as to make it unnecessary to feed alfalfa, which would cost \$10.50 per ton.

This is answered by Prof. F. W. Woll, University Farm, Davis, as follows:

Both oat hay and beet pulp are relatively low in protein substances which are very important components of rations for milk-producing as well as for growing animals. Alfalfa hay on the other hand is higher in protein, or muscle-forming substances, as they are often called. This is shown by the nutritive ratios of the different feeds, by which term we understand the proportion of digestible protein to digestible carbohydrates and fat. The nutritive ratio of oat hay is about 1:8.6 (meaning that there are 8.6 pounds of starchy components, i. e., carbohydrates and fat, for every pound of digestible protein); that of beet pulp 1:15.8; and of alfalfa 1:4.0. Since the rancher does not wish to feed alfalfa hay, one or more of a high-protein concentrate must be supplied, and we then have the choice between wheat bran, middlings, cottonseed meal, linseed meal and coconut meal. The nutritive ratios of these feeds are as follows: Wheat bran 1:1.6, coconut meal 1:3.9.

Since all these concentrates are palatable dairy feeds the choice must be decided largely by their cost. Last week these feeds sold in Los Angeles as follows: wheat bran, \$1.90 per cwt.; middlings, \$2.20; cottonseed meal, \$1.80; linseed meal, \$2.60. Under the conditions stated when a good supply of protein is important, it is evident that the cottonseed meal is by far the cheapest feed that the rancher can buy and feed his cows along with oat hay and beet pulp, while the prices of oil meal, wheat bran and middlings are about prohibitive in this case. I do not have the market prices of coconut meal but it probably does not differ greatly from that of dried beet pulp. Both of these concentrates are excellent feeds for dairy cows and as a rule are relatively cheap. If coconut meal can be had it may enter into the grain ration with the dried beet pulp and cottonseed meal, say in the proportions of two pounds of dried beet pulp to one each of the other feeds, by weight, feeding one pound of this mixture for every five pounds of milk produced by the cows. For a good dairy cow, yielding say three gallons of milk per day, the ration would then be: Oat hay, ad lib. (20 to 25 pounds); beet pulp 2½ pounds; cottonseed meal and coconut meal 1¼ pounds each. This ration would supply the following nutrients in case of feeds of average composition and digestibility: 27.3 pounds dry matter, 1.84 pounds digestible protein and 13.0 pounds digestible carbohydrates and fats (nutritive ratio, 1:7.1.)

This is perhaps the cheapest ration that can be fed under the conditions stated. It is very likely, however, that the production of the cows would be somewhat increased by feeding more protein either in the form of more cottonseed meal or by giving a feed of alfalfa hay once a day. The difference in the price of the two kinds of hay is small compared with the difference in the cost of the starchy and high protein concentrates, as will be readily seen from the figures given above.

The ration suggested can only be recommended where more protein can not very well be supplied either in the roughage or in the grain ration. A good dairy cow ought to have at

least two pounds of digestible protein a day and the ration should contain about a pound of digestible protein for every six pounds of digestible carbohydrates and fat (nutritive ratio, 1:6 or less). The cheapest way of supplying the protein in this case would be to feed both alfalfa and oat hay, either equal parts or one-half as much alfalfa as oat hay, feeding the same grain ration as suggested above.

Guy H. Miller of Modesto writes:

"Your correspondent says he has oat hay worth \$8 a ton which he wishes to feed with dried beet pulp at \$23 per ton, and that alfalfa hay is worth \$10.50 per ton.

"I would not consider oat hay and dried beet pulp a suitable ration for dairy cows. About the only value dried beet pulp would have in that kind of a combination would be that by soaking it, which is the common practice, it would add a certain amount of succulence to the ration. Dried beet pulp and oat hay are both rich in carbohydrates and are deficient in protein. Protein is a necessary ingredient in a ration for dairy cows. Alfalfa hay is rich in protein and is generally of moderate price compared with other protein feeds. That is why it is the greatest single dairy feed yet discovered. If I had to feed oat hay I think I should feed with it wheat bran and coconut meal to obtain a greater amount of protein. Bran is very similar in analysis to alfalfa hay. They each contain about 11 per cent digestible protein and 41 per cent carbohydrates. Bran is a little richer in fat, containing about 2 per cent. Coconut meal contains about 15 per cent protein and 9 per cent fat and can be bought for \$28 per ton. I would consider it a good feed to use with oat hay, but do not think it could be fed alone. It would be eaten better fed with something as a carrier, such as wheat bran.

"I would suggest that the inquirer sell part of his oat hay and buy some alfalfa hay at \$10.50, feeding a feed of oat hay in the morning and a feed of alfalfa at night. If a cow consumes 30 pounds of this mixture daily it would make an approximate ration of 2.28 pounds digestible protein, 12.7 pounds digestible carbohydrates, .4 pounds fat, which would make a very fair ration for a cow milking 20 pounds per day. Cows milking heavier should have some concentrates such as wheat bran and coconut meal with a little dried beet pulp or crushed barley.

If I could get nothing but oat hay in the way of hay to feed I should try feeding 25 to 30 pounds daily per cow with two pounds of coconut meal and four or five pounds of wheat bran. If the cows seemed to relish the coconut meal I would try feeding a little less bran with it, possibly increase the coconut meal a little. In the case of fresh cows giving a heavy flow of milk it might be found necessary to increase both coconut meal and bran.

"Dried beet pulp is a feed that is increasing in popularity in Stanislaus County because Stanislaus County is a heavy alfalfa producing section, and the beet pulp, fairly rich in carbohydrates, is proving an excellent feed with alfalfa hay.

"If the inquirer has a silo or concentrates erecting one, I would suggest to him that he try oats and vetch or barley and vetch for silage; the vetch furnishing a large amount of protein should make a good combination with barley or oats and would save feeding so much high priced concentrates to secure a desired amount of protein. Some dairymen here are finding the barley and vetch combination excellent as a winter crop for silage."

"What is your name?" a Kentuckian asked a negro boy. "Well, boss," he answered, "everywhere I goes they give me a new name, but my maiden name was Moses."—Everybody's.

"Fills Silos as Fast as Eight Teams Can Haul It To Machine"

This satisfaction of a California dairyman is repeated every season by enthusiastic owners on the Pacific Coast

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The steel knives, finely tempered, and bolted to heavy knife wheel are easily removed for grinding. Their greatest value lies in the fact that they cut from the outer edges toward the center where cutting power is greatest. Other wheel type machines cut the other way.

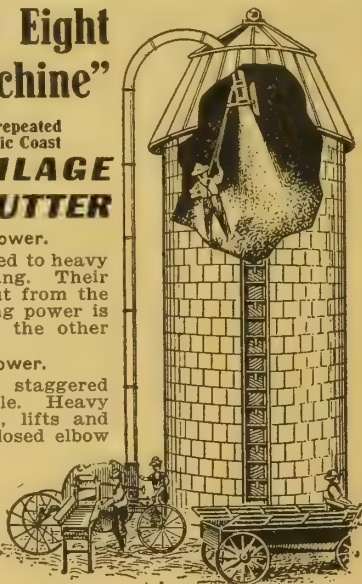
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SMALL GRANS AND ALFALFA FOR HOGS

The growing of swine and the production of pork are industries that today are claiming increasing attention. Experiments with grain, which may take the place of corn for feeding purposes, are of the greatest interest to farmers in this region, because the small grains are often grown in abundance and form the basis of all rations. A great amount of wheat, barley, and rye is fed in the form of mill products, and is of course ground. In common practice also these grains are ground more generally than corn, as they are generally much harder. The greater liability of these small grains to pass through the animal undigested shows the correctness of such a practice.

Best Results with Wheat

Chief among the small grains is wheat, and it appears to be the food best adapted for long-continued hog feeding. The advisability of feeding wheat or any other grain, however, depends upon market prices and economic conditions. It could hardly be regarded as economical to use wheat as stock feed at the high prices now

not saving in the right direction. So many of us are "penny wise and pound foolish."

Save the Whole Corn Plant

Every year millions of acres of corn fodder goes to waste in the corn belt. The ears are husked and stalks left in the field to go to waste. If put in the silo they would have made valuable feed. The great central truth and principle with this silo is that it is a system whereby the whole corn plant may be preserved and made into milk and meat without waste. But the first cost of the silo and machinery has driven the cost of the waste clear out of many farmers' heads. They see the first cost but don't see the dollar's worth of wasted fodder, wasted labor to grow it and wasted opportunity to make a profit on it. This, however, is only one of a thousand ways in which time, money, and effort is wasted on the farm.

Test Out the Unprofitable Cows

Think of the years of hard work the farmers have spent in caring for and feeding the poorly bred cows that will not return a profit. Changing your methods in this direction is simply one

VALUE OF BARLEY FOR COWS

"The Value of Barley for Cows Fed Alfalfa" is the title of Bulletin No. 256 of the University of California agricultural experiment station, by Gordon H. True, F. W. Woll and E. C. Voorhies. Various tables and illustrations make the work very valuable. We quote in full the conclusion:

"The results of the two experiments with feeding barley to cows on alfalfa reported in this bulletin show that an immediate increase in production will be secured as a result of the grain feeding, but that this increase will not, as a rule, pay for the extra cost of the ration. On account of the increased production obtained and the residual effect of the grain feeding, as well as its favorable influence on the condition of the cows and their offspring, it may be concluded, however, that the practice of feeding grain to cows on alfalfa is economically sound and may be recommended. This holds true especially for heifers and young cows, as well as for heavy producing animals which cannot be brought to a maximum production on roughage only, even if this be as excellent and palatable a feed as green alfalfa or good alfalfa hay."

TO AVOID BLOAT IN CATTLE

Rank grass and wet green clover or alfalfa are likely to cause bloat in cattle. Bloat may be avoided if right precautions are taken, says Dr. A. S. Alexander of the college of agriculture, of the University of Wisconsin. Here are a few of them:

Gradually change cows from hay rations to fresh pastures.

Prevent indigestion, because indigestion is the direct cause of bloat.

Feed cows their usual ration of dry hay and grain before turning them out to pasture.

Keep cows off alfalfa fields until dew or rain has dried off, and never turn them on such fields on moisture-laden, "muggy" days.

Give cattle access to a mixture of salt and slaked lime.

Visit pastures frequently in early summer and if possible take along proper remedies and instruments for relieving bad cases of bloat.

BREEDING HORSES IMPORTED

The bureau of animal industry has issued a list of horses imported for breeding purposes during 1914. In the list are 524 Percherons, 391 Belgians, 68 Shires, 51 Clydesdales, 60 Welsh ponies, 22 Hackneys, 24 Shetlands, 30 Suffolks and 35 Thoroughbreds. We do not believe we would have to go back very many years to find the Thoroughbreds topping the list. It shows a material increase in the demand for utility and a decrease in the demand for the racing man's horse.

AYRESHIRE BREEDERS

The Ayreshire Breeders' Association is awaking to the fact that it has a breed of cattle whose merits are well worth being made known. One step in this direction is the issuing of the Ayreshire Quarterly, published by the association from its office at Brandon, Vermont. General information regarding the work of the association may be had by writing Mr. C. M. Winslow, Secretary, Brandon, Vermont.

VACCINATING AGAINST HOG CHOLERA

Circular 132, issued by the veterinary division of the college of agriculture, University of California, is entitled "When to Vaccinate Against Hog Cholera." It is only a four-page circular but should prove very valuable to the hog breeder. One feature of the circular is information regarding the sale at actual cost of anti-hog cholera serum to breeders.

Many thrifty people are now saving up money for vacation by adjourning payment of the grocer's bill until fall.

It is generally the things we have not got that make life worth living.



Producers of Monthly Pay Checks

prevailing. A bushel of wheat properly fed to reasonably well-fed hogs should produce approximately 13 pounds of gain in weight. The results of a number of feeding tests show that there is comparatively little difference in feeding value between wheat and corn for swine.

In comparing various rations in which corn, wheat and rye were fed alone or in combination with each other, it was found that dry, ground wheat gave the greatest returns and required the least amount of grain to make 100 pounds of gain. Wheat should be ground and mixed with some supplement, such as tankage, peas, or soy bean meal. The results obtained from a number of tests have proved this to be a good practice.

Barley Produces Best Pork

In Great Britain and northern Europe barley takes the place of corn for pork production, leading all grains in producing pork of fine quality, both as to hardness and flavor. Considerable study in the United States has been made of the value of barley as pig feed, and the results have shown that it compares very favorably with corn, but has a feeding value somewhat below that of wheat. What this grain may lack in feeding value, however, is more than supplied in its effect on the carcass. As a high grade pig feed it far surpasses any other grain, and this fact makes possible the production of pork of the first quality in regions where barley is produced abundantly. Ground or rolled barley is best fed in combination with wheat middlings, skim-milk, roots, alfalfa, etc.

ECONOMY OF PRODUCTION

Every dairyman that is not making money is allowing some big waste to go on. Probably he will tell you he is as saving as he can be, but he is

way of stopping another waste. By the investment of a few dollars in milk scales and tester and a little time to keep records in, many a farmer has eliminated a waste in his dairy and "started the ball a rolling" towards larger production at a lower cost per unit. But still many farmers can't see this waste any more than in the case of the corn and silo.

When we get right down to the bottom of this subject of dairying we find that it is economy of production that we should worry about more than the price obtained.

We must produce with the highest efficiency and lowest cost. Right here is where the silo comes in, the better bred cow, the modern and sanitary dairy barn, better feeding and better farm management in general.

Business Management

Good management even affects the hired man. We find as a rule that the man who has put dairying on a business basis gives his men shorter hours with better pay than the man who is still getting it in a backward way. One who handles help this way makes labor profitable. As a result he has no trouble getting efficient labor.

If the farmer is going to make a profit on his investment he must learn the great lesson of business; let nothing go to waste, spend money liberally if necessary to prevent leaks. We can learn a lesson from the large business organizations in this respect. We must bring our soil, animals, buildings, machinery and labor to their highest efficiency as soon as possible. If we have faith in this principle and follow it wisely it will surely bring us profit and more pleasure in our farm work.—Farm, Stock and Home.

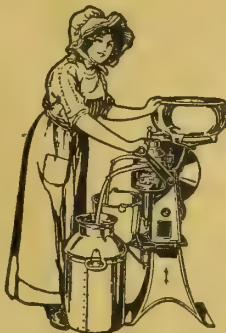
Opportunity knocks now and then for the most people, but it seldom bursts down the door.

HOT WEATHER

the season a

DE LAVAL SEPARATOR

saves most over
any other separator
or skimming system



IT'S A GREAT MISTAKE FOR any dairy farmer without a separator or using an inferior machine to put off the purchase of a De Laval Cream Separator in the summer months.

GREAT AS ARE THE ADVANTAGES of the De Laval over all other separators, as well as over any gravity setting system, at every season of the year, they are even greater during the mid-summer season than at any other time.

THIS IS BECAUSE HOT WEATHER conditions occasion greatest butter-fat losses with gravity setting and render it most difficult to maintain quality of product with any gravity system or unsanitary separator, while, moreover, the quantity of milk is usually greatest, and any loss in either quantity or quality of product means more.

THEN THERE IS THE GREAT saving in time and labor with the simple, easy running, easily

cleaned, large capacity De Laval machines over all other methods or separators, which naturally counts for most at this time of the year.

HENCE THE GREAT MISTAKE

of putting off the purchase of a De Laval Cream Separator in summer, whether you already have a poor machine or none at all, and every dairy farmer should keep in mind not only that a De Laval will pay for itself by next spring, but may, if desired, be bought on such liberal terms as to actually save its own cost while being paid for.

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IF YOU DON'T KNOW THE nearest De Laval agent, please simply write the nearest main office as below.

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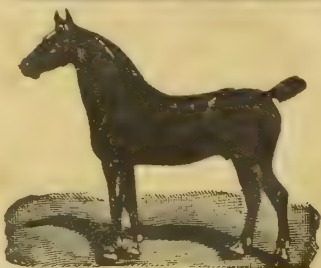
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Puffs, and all lameness from Spavin,
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As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
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will remove them and leaves no blemishes. Reduces any puff or swelling. Does not blister or remove the hair, and horse can be worked. \$2 a bottle delivered. Book 6K free.

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High Grade Stock of Best Strains.
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Veterinary Queries



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Paralysis After Milk Fever

Veterinarian treated cow for milk fever by pumping air into udder and gave hypodermic of strychnine and something to open the bowels. After two days she is still on her side. She eats a little and drinks and does not seem very sick. Has no fever. Can turn over but not stand.

Your veterinarian did all right for the milk fever but he should have applied liniment to the loins and warmed it in with a hot blanket. Enemas should also have been given and the cow turned from side to side frequently. When the cow is once on her feet again and the bowels started freely she will probably get along all right.

Cows Not Breeding

Have a few cows that will not receive bull. They are on pasture and in good condition.—Subscriber, Smith River.

You can do very little except to let nature take its course.

Might suggest that you place salt where they have free access to it. A little sulphate of iron mixed with the salt might help some.

Collar Tumor

I have a horse that has a large caloused lump on the point of the shoulder. It is raw on the surface and has a center that discharges a little. Is there anything I can do to cure it?—Subscriber, Ontario.

Those hard lumps are caused by the continued pressure of an ill-fitting collar. First, use a close-fitting collar and adjust the hames so the tug will draw from a point higher up. Apply the following liniment to the lump once a day: Mercury bichloride one dram, alcohol one ounce and enough turpentine to make one pint.

Cure for Sweeny

Through the kindness of Mr. George Wineman of Santa Maria we have the following letter: "For the benefit of the subscriber at Bloomington whose mule has sweeny, I am sending the following formula. It was given to my father more than 25 years ago. In all that time I have never known it to fail to cure a case of sweeny. It is to be applied each morning with the hand to the affected muscle and should be used for five successive days, but it is so strong that three applications is all that the horse will usually stand. We apply the remedy and continue to work our horses. In from two to six months the muscle grows out and the animal is as well as ever." The formula follows:

One ounce of each of the following ingredients: Oil of spike, spirits of turpentine, aqua ammonia, oil organum, sweet oil and alcohol.

Contagious Conjunctivitis

Several of my cattle on range have recently developed eye trouble. I am satisfied that foxtail isn't the cause. The left eye is usually attacked first, a thin watery fluid is discharged, caking as it dries. Shortly after the right eye is affected, and as the trouble develops a cloudy film spreads over the eyeball, the edges of the eyeball become bloodshot, the lids are more or less inflamed and the animal is almost totally blind. If a disease, what is the cause? Is it infectious or contagious like glanders? Can a human being become affected? How is it spread and what is the best treatment?—Subscriber, San Dimas.

The front of the eye is covered with a thin skin or membrane that is called the conjunctiva. It is very thin and perfectly transparent. Inflammation of this membrane causes it to become

thickened and turn white. The disease is called conjunctivitis. The trouble may be caused by an injury or by microbes. Its occurring in several animals leads one to believe it is due to microbes. It is contagious with animals but does not affect the eyes of people. The following treatment usually restores the sight in a short time. Sponge the eye well with warm water and then dry it by pressing a clean towel against it. This can be done with the eye closed.

Then press the lids apart with the fingers and apply with a camel's hair brush to the membrane a solution made of ten grains of nitrate of silver to the ounce of water. Repeat this once a day until the eye is partly cleared. The animal should be kept in the dark as the light causes pain and retards recovery. Or if it is necessary to turn them out for feed, tie a thick cloth to the horns or halter so it will cover the affected eyes and keep the light out.

Farm Bureaus

Cochise and Santa Cruz Counties,
Arizona, A. L. Paschall, Agent,
San Simon

Turner, July 20, 9:00 a. m., S. N. Gordon's farm, Mescal Flat, S. N. Gordon, leader.

Elgin, July 20, 2:30 p. m., Rain Valley, Chas. L. Wood, leader. July 21, 10:00 a. m., O. J. Rothrock's farm, O. J. Rothrock, leader. July 21, 2:30 p. m., farmers' meeting, Fruitland Hall, Chas. L. Wood, leader. July 22, 10:00 a. m., J. M. Frazier's farm, Vaughan, J. M. Frazier, leader. July 22, 2:30 p. m., Cunningham's farm, Jas. F. Cunningham, leader.

Canille, July 23, 10:00 a. m., Bower's farm, W. E. Bower, leader.

Sonoita, July 24, 10:00 a. m., Manning's farm, Mark Manning, leader. July 24, 2:30 p. m., farmers' meeting, Sonoita schoolhouse, J. S. Gashwiler, leader.

St. David, July 26, 2:30 p. m., boys' and girls' club, Chas. McRae's farm, Chas. McRae, leader. July 26, 3:15 p. m., Wm. Goodman's farm, W. G. Goodman, leader.

Benson, July 27, 10:00 a. m., Cosby's farm, M. P. Cosby, leader. July 27, 2:00 p. m., farmers' meeting, schoolhouse at Robinson, M. P. Cosby and A. H. Scott, leaders.

Dragoon, July 28, 10:00 a. m., Adams' farm, W. W. Adams, leader.

Cochise, July 28, 2:30 p. m., farmers' meeting, experiment station, C. R. Fillerup, leader. July 29, 9:00 a. m., E. N. Smith's farm, E. N. Smith, leader. July 29, 2:00 p. m., Mat Jenkins' farm, W. M. Jenkins, leader.

Pearce, July 29, 7:30 p. m., farmers' meeting, Stronghold schoolhouse, C. H. Wilson and A. J. Benedict, leaders.

Webb, July 30, 10:00 a. m., boys' club, E. D. Harris, leader.

Maricopa County, Arizona, Jas. A. Armstrong, Agent, Phoenix

Maricopa County interests are coming together. Forty business men met last Thursday and decided to appoint a committee to draw up plans for a county organization of existing organizations to be composed of one delegate from each district, these delegates to form an advisory council on agricultural subjects to work with the farm adviser for the increasing of farm profits in the county. The following committee meets today, July 15: W. E. Walker, Roosevelt District; C. C. Green, Glendale; F. E. Jack, Alhambra; P. Aepli, Tempe; H. Clay Parker, Roosevelt; J. C. Norton, Phoenix; W. Peterson, Arlington; Elijah Allen, Mesa; J. O. Barnard, Laveen; R. Huckler, Washington; A. W. Ayers, Gilbert; Geo. Brown, Buckeye; S. C. Sorrensen, Lehi; Secretary Parkhurst, Chandler.

Favorable reports are being received daily from ranchers fighting harvester ants. The following are a few: F. A. Van Meter, Mesa, says, "We have to do it or move out." Geo. Peterson, Mesa, "About half the nests first treated had to be retreated." R. M. George, Scottsdale, "I doped them twice last fall and once this spring, ants almost gone." Harry L. Shedd, Phoenix, "Used London Purple last year and have no sign of ants this year."

Red spiders are showing up since the hot weather began. If your trees look dusty and the leaves drop off, examine them closely and if very small yellow spiders, about the size of a pin point are seen, then dust your trees with dry sulphur. This like other troubles is easier prevented than cured.

Lettuce growers have asked that the university send a man to help them during the coming season. S. B. Johnson, a vegetable specialist, will be over to first study the situation and make recommendations. He and Farm

Adviser Armstrong will work with the lettuce growers.

Sheep on the ditch bank will be discussed by Prof. A. M. McOmie at Chandler July 24. This is an open meeting of the Farmers Union. Prof. J. J. Thornber has also promised to be present but has not announced the subject of his talk.

Manager McNab and the farm adviser will meet with the Higley Board of Trade on July 23. Mr. McNab thinks that the Higley district is an ideal place for the breeding of pure seeds.

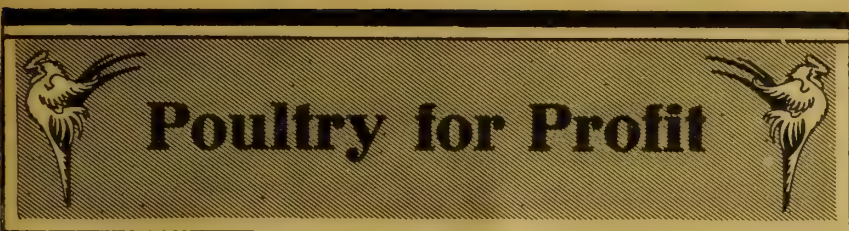
TO PREVENT FOREST FIRES

To obtain the cooperation of the public in preventing forest fires, which are doing a great deal of damage in the East this spring, the United States forest service has prepared ten "Don't's" to be observed in the woods.

DON'T'S

1. Don't throw your match away until you are sure it is out.
2. Don't drop cigarette or cigar butts until the glow is extinguished.
3. Don't knock out your pipe ashes while hot, or where they will fall into dry leaves or other inflammable material.
4. Don't build a camp fire any larger than is absolutely necessary.
5. Don't build a fire against a tree, a log, or a stump, or anywhere but on bare soil.
6. Don't leave a fire until you are sure it is out; if necessary smother it with earth or water.
7. Don't burn brush or refuse in or near the woods if there is any chance that the fire may spread beyond your control or that the wind may carry sparks where they would start a new fire.
8. Don't be any more careless with fire in the woods than you are with fire in your own home.
9. Don't be idle when you discover a fire in the woods; if you can't put it out yourself, get help. Where a forest guard, ranger, or state fire warden can be reached, call him up on the nearest telephone you can find.
10. Don't forget that human thoughtlessness and negligence are the causes of more than half of the forest fires in this country and that the smallest spark may start a conflagration that will result in loss of life and destruction of timber and young growth valuable not only for lumber but for their influence in helping to prevent flood, erosion, and drought.

Many thousands of acres of forest and suburban woodland from Maine to Florida, and from the Atlantic coast as far west as Arkansas, have been burned over already this spring by fires which started for the most part from preventable causes. On the national forest purchase areas alone, 49 fires occurred in March, burning over more than 6500 acres, while 44 fires starting on private land near or within government boundaries damaged nearly 5500 acres. Fires in April were even more numerous and severe, but rains in the latter part of the month helped the situation somewhat. Fire statistics for April are not yet available.



Poultry for Profit

FINISHING FOR MARKET

Written for the California Cultivator
By Jean A. Koethen

THE finishing of poultry for market is an art in itself. Anyone can raise chickens; almost anyone can fatten them, for this requires only confinement and plenty of corn; but the proper finishing of poultry so that the fat is evenly distributed over the carcass is a delicate matter and understood by only a few Americans. A bird that is sent to market should not only weigh as much as it can be made to weigh at that age, but it should be so plump and well filled out in every part that it will look as good as it tastes.

We Americans have little to boast of when it comes to preparing chickens for market. Whatever our progress may have been in other ways and however the poultry industry may have grown—and it certainly has—we have not advanced an inch in 2000 years in our preparation of fowls for the table. Indeed, it is a question whether those old Roman epicures did not have better table poultry than ours.

The methods of coop-fattening followed in most big finishing plants in this country today is very similar to that of the Romans. The birds are confined in small cages, five or six in each, with barely room to turn, and are fed a mixture of ground grains, usually containing oats, wheat, corn, barley, and sometimes oil meal. The mixture is moistened with skim or sour milk when possible and fed in troughs on the outside of the coops. The feeding is done three times a day, and it takes from 20 to 25 days to finish a fowl. In these plants the coops are arranged in tiers five or six high. They have solid bottoms with slatted bottoms above so arranged that the droppings may fall through the slatted bottom to the solid bottom and be removed without disturbing the birds. In some plants it is not considered necessary to remove the droppings till the finishing is completed.

Machine cramming, which has been practiced in France and England for many years, is gradually being taken up in this country. It seems a brutal method akin to the forced feeding of human beings but brings the birds to a perfect finish more quickly and is probably no more brutal than other treatment which fowls receive. It has developed from the use of a funnel as practiced at Maris, France, in the last century. Here the birds after being placed in rows of pens in a warm place were crammed three times a day with barley meal, wheat, millet and maize, soaked in milk and fed through the funnel in a rather liquid state. With the help of the funnel a man could cram 50 fowls in an hour.

Buckwheat, low grade flour, shorts, barley meal, ground oats and corn meal are the best fattening feeds, but they are much more effective when

mixed with sour milk. A recent government bulletin on "The Commercial Fattening of Poultry" gives three rations which have been found satisfactory:

No. 1 consists of three parts corn meal, two parts low grade flour, one part shorts.

No. 2—Three parts corn meal, two parts low grade flour.

No. 3—Five parts corn meal, three parts low grade flour, one part shorts, five per cent tallow.

All but the last are mixed with thick buttermilk.

At Purdue University, where special attention has been paid to the production of market poultry, the ration consists of: Two pounds corn meal, one pound shorts, one pound ground oats, eight pounds buttermilk.

Professor Dryden of Oregon agricultural college recommends a ration consisting of equal parts ground oats, ground barley and middlings, with a little bran, and all moistened with buttermilk.

The English have long been adepts in the art of finishing poultry. In the early part of the nineteenth century a Sussex man was quite famous for his fattening of chickens which "reached a size and perfection not known elsewhere. The food given them was ground oats made into gruel, mixed with hogs' lard or grease, sugar, pot liquor and milk; or ground oats, treacle, and suet, also sheep's pluck, etc. They were kept very warm and always crammed in the morning and at night. The pot liquor was mixed with a few handfuls of oatmeal, then boiled up, taken off the fire and the meal therewith made into paste and divided into rolls for cramming. The fowls were put into the coops a few days previous to cramming, the process being completed in a fortnight. Fowls thus fattened would weigh about seven pounds and average five pounds, though some arrived at double that weight."

These interesting facts regarding fattening of poultry in earlier times are given by Miller Purvis in an article in Harrison Weir's "Poultry Book." Mr. Purvis says that his father had a couple of pullets from a farmer in Cuckfield, England, in 1834, which weighed over 21 pounds, the food used being two parts oatmeal to one part barley meal mixed with milk, with some suet and a little sugar added. Mr. Purvis concludes:

"It has been generally supposed that the more nutritious the food given the better the fowl, but experiments have proved that this is by no means always the case. For instance buckwheat and oatmeal mixed have not been found so serviceable as when one-third of boiled potatoes have been added. Again ground corn is better with one-third boiled unhusked rice. Ground oats, with one part potatoes or some boiled cabbage, are good; wheat and rice boiled together are good, as is also buckwheat and one-third potatoes, with a finish of all buckwheat. The old finishers never gave hard grain, but if whole, soaked it at least 12 hours or boiled it. In all cases it was usual to add some gravel or very sharp sand. Sometimes table beer was used in the latter part of the day for moistening the food and skim milk in the morning, but not generally. The giving of sugar was thought to make the birds so thirsty that they would eat more of the mixed food for the sake of the moisture."

LEG WEAKNESS IN CHICKS

When a poultryman goes out in the morning to find his biggest framed, most rapid growing chick wobbling around on unsteady legs, and by night walking upon his hock joints, or refusing to walk at all, he wishes to know what causes leg-weakness and why it affects his most rapidly growing chick, if any. For his benefit Helen Dow Whitaker of the poultry department of Washington state college explains that leg-weakness is found more

often among brooder reared than among hen reared chicks. One condition favoring it is a bottom-heated hover. The floor of the hover should be slightly warm, about 60 degrees, but should never feel hot to the hand. The chick that sleeps stretched out upon a hot floor is weakened thereby. Nature seems to insist that a chick should have heat radiated from above down over his back, and teaches him to stick his head out from under his mother or the edge of the hover to keep it cool and get fresh air.

Other conditions favoring leg-weakness are over-crowding, poor ventilation, dampness and whatever tends to lessen the vitality of the chick. Keeping chicks upon hard wooden or cement floors too much of the day is frequently cited as a cause of leg-weakness. It rarely affects chicks that from the start are able to be out on reasonably dry, loose earth in which they scratch incessantly, and where they find abundant tender, succulent green food. Unquestionably, if there be added to a lack of exercise and a lack of good green food, the overfeeding of a somewhat rich ration, leg-weakness is likely to result.

Chicks need, in abundance, nutrients for the building of bone and muscles. Their ability to get these is dependent upon the right food supplied them, appetite to induce them to eat largely, ability, not only to digest what they eat, but to assimilate the nourishment in it.

Lessen a chick's vitality by overheating, crowding, impure air and dampness, keep him upon a hard board floor that offers little inducement to exercise, overfeed him on rich food until his appetite is cloyed and his system clogged so that he cannot digest his food and it is not strange that his rapidly growing frame and muscles fail to get the supply of building material called for and break down in what we call leg-weakness.

The remedy is fresh air, sunshine, room for vigorous scratching in loose soil, a supply of food measured by the appetite, with plentiful green stuff and fresh water to aid in his digestion. Protein and ash are needed rather than fats. These are supplied by rolled oats for the first four weeks and later sprouted oats, by wheat bran, finely cut green clover or alfalfa, milk and granulated bone.

I wish especially to emphasize the value of a high grade of dry granulated bone. Its analysis shows over 20 per cent of protein for muscles and feathers, over 40 per cent of lime for bones and feathers, and over 20 per cent of phosphoric acid. The phosphates are more and more being recognized as valuable in animal nutrition and hence growth. Use at least one pound of granulated bone to every ten pounds of bran fed to growing chicks.

MITE CAUSE MIGHTY LOSSES

Are your fowls dumpish? Do they peck and scratch their plumage? Is the egg record dwindling?

If so there's a reason, and possibly it's lice or mites.

Eight or more distinct varieties of lice commonly affect the domestic fowl during the day time, and then at night they are "pestered" with "the bed bugs of the poultry world"—red mites. In addition to external discomfort, lice and mites are often the cause of serious losses.

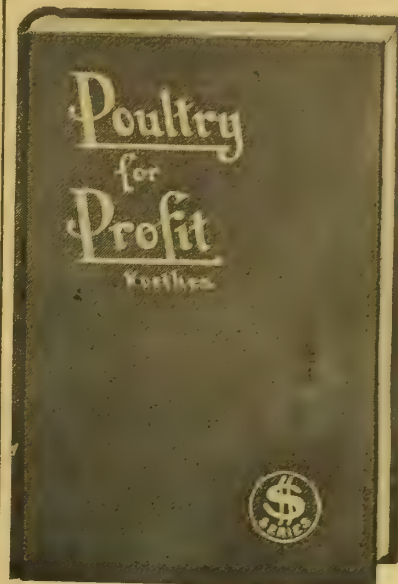
Here are a few hints on the subject by the head of the poultry department at the University of Wisconsin:

"To find out if mites are present, pour some kerosene into the crevices of the roosts. Fumigate at once if the insects are present. Remove all loose boards and litter from the house and tightly close the doors and windows. This should be done early in the day and the fowls kept out after fumigation until the premises are well aired.

"Spraying with whitewash, kerosene, coal tar disinfectant, or crude carbolic acid is more satisfactory. One part crude carbolic acid with 15 parts of kerosene makes a splendid mite killer. Painting the roosts and nests with one of the commercial compounds takes a little longer but is more effective.

"In mite extermination the important thing is to reach every crack and crevice with the spray mixture. The next important point is to repeat the application at frequent intervals in order to kill any pests that may have hatched in the meantime."

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THE DISK HARROW

By C. A. Bacon of the I. H. C. Service
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The disk harrow if properly used
will turn the farmer more profit than
any other tool which he owns, and it
is equally true that if this implement
if misused it will cause a great deal
of loss.

Every farmer should understand
thoroughly why he disks. The mere
going over the ground with a disk
harrow doesn't necessarily mean that
the farmer is deriving any benefit
from it (nor does it mean that he isn't.
The farmer must understand the rela-
tion of moisture to the soil and growth
of the plant and what is necessary to
conserve moisture. This is essential
to the farmer's greatest success, no
matter where he farms.

Up to the present time the disk
harrow has been the most practical
implement for the farmer to use in
preparing a perfect seed bed. It has
been demonstrated time and time
again that farmers who thoroughly
disk the stubble immediately after the
grain is harvested, plow a few weeks
later, disk the ground the next spring
as soon as they can get onto the field,
and follow it up at intervals to keep
a soil mulch on the surface until sow-
ing time, have harvested from five to
25 bushels more per acre than their
neighbors who did not follow this
method.

All farmers know what a cloddy
field means. When ground is in this
condition, a disk harrow must be used,
but how many farmers realize that if
the ground is thoroughly treated with
the disk harrow in the right manner
they never would be troubled with
clods?

Generally speaking clods are the re-
sult of two causes. First the ground
is plowed when too wet and bakes in
the heat of the sun. Second the
ground is plowed when too dry.

The great percentage of cloddy
ground comes from the too dry plow-
ing. The farmer who follows the
binder with a disk harrow, thoroughly
pulverizing the ground, puts it in the
right physical condition to bring mois-
ture from the sub-surface to soften
the hard ground. This makes plow-
ing easier and turns over a moist stub-
ble free from clods.

While the farmer is following the
binder with a disk harrow he is also
conserving the moisture for the next
year's crop. If the stubble is left
standing the ground-cracks constantly
increase and the moisture evaporates
more readily, drawing out before the
winter season approaches a great per-
centage of the water that is left in
the ground after the crop is harvested.
A great many farmers, particularly in
the semi-arid regions, have used the
disk harrow, partially following the
rules laid down by dry farming au-
thorities, and having met with dismal
failure, they have condemned the disk
harrow. The trouble of these farmers
was with themselves and not with
the so-called system of dry farming,
nor with the disk harrow. It requires
water to grow crops. Those farmers
who made this failure undertook to
disk the ground after it had become
thoroughly dried out. Moisture can-
not be conserved if it isn't in the
ground. If those farmers who made
this failure will take special pains
to follow the correct principles of
farming during the year when they
have rainfall they need not worry
about their ground drying up and
blowing away, or about the disk har-
row being a failure.

It is a well known fact that dry
farming cannot be conducted without
the use of the disk harrow because
the disk puts the soil in the proper
condition to drink in all of the rains
and conserve the water for future use
as well as to retain that moisture
which is already in the soil. This has
been demonstrated so many times that
there is no question about it. The
farmer who has trouble with his
ground drying up and blowing away
after he disks it, whether he knows
it or not, has done this work after the
moisture is gone. It is the same thing
as locking the barn after the horse is
stolen. Every operation that a farmer
performs with a disk harrow both
directly and indirectly conserves mois-
ture. Killing of weeds, stirring of the
soil for aeration and warmth are all
directly connected with moisture con-
servation. From this it goes without
further reasoning that the farmer who
makes a thorough study of the
amount of moisture it requires to grow
any given crop and uses the disk har-
row to conserve that moisture, must
of necessity raise that crop, as far as
moisture is concerned. The conserva-
tion of moisture depends upon the
breaking up of capillary connection
on the surface of the ground and hav-
ing the soil particles in the subsurface
in the proper physical condition for
capillary attraction. This condition is
to have the ground free from air
spaces, large lumps, large foreign sub-
stances such as corn stalks, corn stalk
roots, bunches of manure, unpulver-
ized straw, etc. These foreign sub-
stances prevent the particles of soil
from becoming compact and firm; a
firm, compact soil is necessary for
capillary attraction.

The farmer who thoroughly under-
stands these things and sees to it
when the seed bed is prepared that
there is nothing in the ground to pre-
vent the compactness of the soil
particles, and who keeps the mulch on
the surface, need not worry about
crop failure. This means the use of
the disk harrow to cut up the corn
stalks and roots, to slice the stubble
furrow before the plowing is done, and
then before the crop is sown to disk
the ground every time a little crust
begins to form and so break up the
capillarity with the surface. If the
farmer lives in a district where it is
necessary to practice dry farming and
discovers that he hasn't moisture
enough in the ground to grow a crop
in any given year, plowing of the
ground, summer fallowing with a disk
harrow to drink in all the summer's
rain, will put him in a position to
grow three crops in five years in the
worst times. The farmer who lives
where the rainfall is abundant, by
following this method will never have
a crop failure, even in those years
when he thinks the season is dry.

Questions and Answers

THE EDITOR

AND STAFF



Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Roup

Plymouth Rocks, one and two months old, have disease in their heads which is like cold. Run at nostrils some, but more have heads stopped up. Chicks also sneeze and with some effort. As disease advances the breathing sounds wheezy and their eyes become watery. What is this and how can I cure it?—Subscriber, Lytton.

Your chickens have taken cold and it has developed into a mild form of roup, which is, after all, only another name for a catarrhal cold. The first thing to do to cure it is to find out the cause. I suspect your chickens sleep in overcrowded or unventilated coops, then they come out into the chill morning air and begin to sneeze or snuffle. Perhaps there are unremoved droppings in the coops. Nothing will more surely cause, roup than sleeping in close quarters where the air is poisoned by filth. Rocks two months old are old enough to roost in trees or wherever they wish, and the month-old birds should have open-front coops. Some of my Orpingtons took to the trees last summer at the age of five weeks, and you may be sure there were no colds. A little vaseline rubbed on the heads will help the sticky eyes, and a half-grain of quinine all round would do no harm, but the main thing is sanitation. Give them fresh air night and day, plenty of clean ground to run on, clean coops and green feed, and there will be no need of doctoring. If you are in doubt as to your chicks' need of air, go to their coop in the evening, open it and notice the odor of air that comes out. If you would not like to breathe it, be sure they do not.—J. A. K.

Ginger

We recently had a request for information as to the possibility of growing ginger as a commercial crop in California. We referred the matter to Dr. J. Eliot Coit of the state university and Dr. Coit writes:

"I apprehend that on account of the fact that the plant prefers a moist, tropical climate it may possibly not do its best in our dry atmosphere. However one can never tell about these things without experiment, and it would be interesting to try the plant in the Imperial and Coachella Valleys. I find very little on the subject of ginger culture. There is an article on methods of ginger culture in Southern India in the "Indian Gardener and Planter;" also "Ginger Culture," by G. Landes, Queensland Agricultural Journal. There are descriptions of many varieties of ginger in the 1909 Annual Report of the Agricultural Stations for East Bengal and Assam, 1909.

"Referring to Macmillan in "Tropical Gardening," I find the following:

"The ginger plant, Zingiber officinale, is an herbaceous perennial with leafy shoots which grow about 18 inches high. It is a native of India but has been introduced and is now cultivated in all tropical countries. Commercial ginger comes chiefly from India, Ceylon, West Africa, Japan and Jamaica, the highest-priced grade of ginger coming from the last named place. The underground rhizomes or thickened roots are dug, washed, scalded with hot water, the outer peel is removed by hand with knives and the remainder dried, when it is ready for market. Prices in London vary from 40 to 80 shillings per hundred weight. The plant is propagated by divisions of the rhizomes which are planted in rows two feet apart with about 14 inches between the plants and the rows. The crop is ready to harvest ten months from time of planting. Under favorable circumstances the yield may reach 2500 pounds of cured ginger per acre, but

the average is about 1200 pounds."

"One should consider the economic conditions obtaining in this country before going into ginger culture. Even should the plant succeed under ordinary conditions it is a question whether it can be dug and prepared for market with our high-priced labor, competing with the cheap labor obtaining in those countries which now produce commercial ginger."

Special crops like the above and certain medicinal plants are worthy of fullest investigation and of experimental planting before entering into their production on a large scale. It sometimes looks attractive to the farmer to grow those crops which others are not growing, but it must be borne in mind that to dispose of such crops often requires more skill than to dispose of staples. Drug manufacturers are encouraging general planting of various plants used in the manufacture of drugs. This may result in keeping in this country vast sums now sent to foreign countries for these products, but the individual farmer should know his ground before entering into this new work.

Estimating Tonnage of Hay by Measurements

How many cubic feet of hay are there in a ton of oat hay that has been stacked two weeks?—Subscriber, Santa Rosa.

To make a fairly accurate estimate of hay in mow or stack the character of the hay must be considered, that is, short hay with large heads will weigh heavier than that with coarser, longer straw; also the manner and amount of packing when put away or stacked; also the size of the stack, for the larger the stack the more compact the lower portion will be. Perhaps as fair an estimate as one could arrive at would be to take 500 cubic feet to the ton with newly stacked hay. Of course for very closely packed hay perhaps 400 or 450 would be nearer correct.

Subirrigation

Is there such a thing as subirrigation and how is it secured?—Subscriber, Tulare.

Some lands slope away from the higher hills in which there is an abundance of water underlaid with a stratum of gravel which carries moisture and thus naturally subirrigates the land. Such lands are valuable and there are altogether too few of them in the state. There have been many efforts to secure similar results by embedding porous or perforated pipes in the ground at a proper depth to thoroughly subirrigate the land. This has been found extremely expensive and while satisfactory for the first year or two has not proved so after roots have had opportunity to fill up the pores or

openings. Subirrigation is attractive for the reason that it may give a maximum of crops with minimum of moisture. However, the difficulties have been so great that it is not, and probably never will be, generally followed.

Winter Pasture Crop

I have ten acres formerly in alfalfa on which I have grown a crop of wheat. I want to irrigate and plow and seed to some small grain. I wish it for fall and winter pasture and in the spring will plow under what is left for green manure. What is the best crop to plant, rye, winter wheat or what?—Subscriber, Bishop.

Mr. W. S. Guilford writes. I would suggest Egyptian corn, feterita sorghum or milo for the summer crop and barley for the winter crop. There is no question but that some of the corns or sorghums would give better results for the summer crop than any grain, and I believe that barley has proven a safer crop as a general thing than wheat or rye, although either one might make a good crop. I doubt if the feeding value of the crop from the three grains would be materially different in value from the same land and under the same conditions, providing they all matured all right, but as before stated I would chance the barley rather than the wheat or rye.

Removing Bitterness from Apricot Kernels.

We had a request recently for method of removing bitterness from apricot kernels. The matter was referred to Sales Manager Bolster of the California Cured Fruit Exchange, and he answers: "We export apricot kernels which have formerly been shipped mostly to Germany, but this year they are being sold to England. We cannot tell you their process for taking out the bitterness but they do manufacture both "almond" paste and prussic acid from the apricot kernels. However, we are not informed regarding the process."

Raising Turkeys

I wish to raise turkeys next year. Will females hatched in May of this year, mated to two-year-old males, produce progeny of living strength?—Subscriber, Lakeside.

If the stock is vigorous and the male not related to the females there is no reason why a mating of two-year-old males to hens nearly a year old should not produce a fair per cent of good livable poults; but the progeny will be larger and probably stronger if young males are mated to two-year-old hens. Much depends on the size and vigor of the male bird. He should not be over standard weight, but if he is under weight the young birds will rarely reach the size they should.—J. A. K.

The Swiss government has purchased in Venezuela about 15,000 oxen to use for food. The first shipment of the cattle is expected to reach Switzerland during the month of August.

A press dispatch from London announces that the British government has placed orders with Ontario firms for jam to the value of \$2,500,000.

THE USE OF THE CHECK BOOK.

Farmers who do most of their business by check can with little effort keep a very satisfactory account of the total farm receipts and expenses. Two things are essential for the success of this method.

First, all money received from any source, whether in cash or by check, should be deposited in the bank. By doing this the record of deposits will give the entire farm income. Most important of all it insures against any moneys being spent without a check or stub to show for it.

Second, when drawing checks care should be used to state for what purpose drawn. In this way the check stub will give an itemized account of the farm expenditures.

Under this system checks for money for personal use are drawn in the same way as for any other purpose. At times the purchase of minor articles for farm use will require cash when the amount is so small that it is not desirable to use a check; therefore to have an exact record a memorandum of the farm items which are paid out of the money checked out for personal use is needed. That is, these items should be charged to the farm, but they are really paid out of the pocket money which is charged on the check book to the personal account.

A memorandum of produce exchanged for groceries is also necessary, as there is no cash transaction in such cases.

In using this system it is better to have a large book of checks, which, if the farm business is of moderate size, the banker will gladly furnish with the checks numbered and the owner's name printed on them. A check book of this kind will generally last for a year—thus the advantage of having all the accounts in one book. This check book system as an aid to keeping financial accounts on the farm is very simple and will prove valuable to a large number of men whose business is adapted to it.—E. H. Thomson, in Farm Management Monthly.

CABBAGE GROWING

"Cabbage Growing in California" is the title of Bulletin or rather Circular 130, by Stanley S. Rogers, issued by the agricultural experiment station University of California. It is an illustrated circular of 22 pages and gives early history, types and varieties, soils, moisture, climatic requirements, care, time of planting and various other cultural directions to follow with the cabbage crop. There is a description of pests affecting the crop.

All sensible people who have the means and opportunity, recuperate themselves by frequent pauses for recreation. They do not defer this period of pleasure until the closing months of a worn out life. They are too wise to expect impossibilities of nature—the recuperation of an utterly exhausted body. They are grateful to Heaven that they possess the means which is wisely used to prolong a useful existence.

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Use Corn Syrup in Preserving

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Now that the preserving season is again at hand, every woman should know a little secret demonstrated by both American and English manufacturers of high grade preserves, after much experimenting on their part. This is, that much better results can be obtained if part corn syrup is substituted for all sugar.

The corn syrup being less sweet, more of the natural flavor of the fruit is retained. When using sugar alone, so much sugar is required to obtain the thick, heavy syrup desired by most housewives that the product is made too sweet. Also in making jams and jellies, especially from such fruits as grapes, where the natural sugar of the fruit is inclined to crystallize, the use of corn syrup will absolutely prevent crystallization.

It goes without saying, of course, that the best results cannot be obtained if an inferior corn syrup is used. The best domestic science schools recommend the brand known as Karo (Crystal White) for this purpose, and train their students to blend sugar and corn syrup in preserving. Karo (Crystal White) can be obtained of all modern grocers. In ordering, ask for the little Karo Cook Book, which contains much valuable information on preserving

Is Your House Over-run With Ants?

Read the Following Simple Method of Exterminating This Plague

A house over-run with ants is not a pleasant proposition, but it is not the serious matter that it used to be. There was a time when it was practically impossible to rid a house of ants. Now, however, it is comparatively a simple matter.

This is due to the fact that a paste has been discovered which appears to have an almost supernatural power over ants: It not only drives them out of a house or store immediately, but keeps them out afterward. Thousands of enthusiastic testimonials bear evidence as to its efficiency.

This remedy is being put up for general use under the name of Kellogg's Ant Paste and can be obtained at all drug-gists. It is the little sentinel which will guard your house against ants. Try a package today and be convinced.

MAKE MONEY OUT OF JIMSON WEED LEAVES

It is amusing to note that the leaves of Jimson Weed, owing to the European war, now command a value. Any school boy in California can make \$2.00 to \$3.00 a day picking the green leaves. The Haas Seed Co., No. 1800 Lincoln Avenue, are paying 1½ cents a pound for the fresh green leaves. All you have to do is ship them in a clean grain sack to the concern and get your money by return mail. They pay the freight. Any quantity shipped providing it is not less than 25 pounds will be received by them and paid for. Now is the time to pick them when they are in blossom.

Write for instructions how to pick and ship them to the Haas Seed Co., 1800 Lincoln Ave., Pasadena, Cal.—Adv.

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Woman began her career as a rib; now she is the whole umbrella.



A PROCESSION

Did you ever happen to think, when dark
Lights up the lamps outside the pane,
And you look through the glass on that wonderland
Where the witches are making their tea in the rain,
Of the great procession that says its prayers
All the world over, and climbs the stairs,
And goes to a wonderland of dreams,
Where nothing at all is just what it seems?

All the world over at eight o'clock,
Sad and sorrowful, glad and gay,
These with their eyes as bright as dawn,
Those almost asleep on the way;
This one capering, that one cross,
Plated tresses or curling floss,
Slowly the long procession streams
Up to the wonderland of dreams.

—Harriet Prescott Spofford.

THROUGH THE LOCK

PETERKIN was all ready to go; his tan-colored shoes and stockings were on, and even his best cap was in his hand, when his big brother said, mysteriously, "You will have to go through a lock you know."

Now Peterkin did not know, but of course he did not want to say so. There was no time to ask grandma, and he had to start on his journey wondering how he could get through a lock. If it was a padlock it would have to be enormous just to let him through the loop part. If it was in a door—well, it was no use to worry, because he could get through it if Uncle Frank, who was going with him, could.

The evening before Uncle Frank had said, "I am going up to Harrisville by boat tomorrow and I should like to have Peterkin go along to take care of me, if you are willing." Peterkin's mother was willing, and early this bright, cool morning the two travelers were on the little steamer, ready for their trip.

For several hours they sailed up a beautiful lake. Then, just as they came to the end of it, and Peterkin feared that the journey was all done, they sailed up a little river which flowed into the lake.

"Are we most there?" Peterkin asked, regretfully.

"Oh, no, only about half-way," answered his uncle. "The river joins two lakes, and we are going to the upper end of the other. Now watch for the lock!"

The lock again! Uncle Frank went on reading and Peterkin began watching. There was nothing to see but water and trees. In one place the river twisted like the letter S, and a boat that had been following them seemed to be going in the opposite direction. Peterkin would have watched it between the trees if he had not been looking for a lock. Would it hang on a big tree? There did not seem to be anything else to fasten it to.

"There it is!" exclaimed Uncle Frank, glancing up from his paper just as the river made a sudden bend. "I always like to see a boat go through a lock."

It was more puzzling still. The boat also must go through!

"Did you ever go through a lock before?" asked Uncle Frank.

Peterkin confessed that he had not. "Come forward with me, then, so that we can see just how the boat is lifted. A lock is really a big stair. The second lake is eight feet higher than the first, and we must step up there somehow. We cannot sail up such a hill, and so we will take one long step instead. Here we go into the lock!"

In a moment two great gates were closed behind the steamer. In front of the steamer were two more gates,

which had been closed all the time the boat was entering the lock.

"Now we are locked in," said Uncle Frank.

Sure enough, they were. There were gates in front, gates behind, and the banks on each side built up with stonework.

"See that big white stone?" said Uncle Frank, pointing out one of the upper gates. "Now see the water reach it!"

The gateman opened two small, sliding doors in the great front gate, and the water from above rushed in. The water rose in the lock, and of course the boat went up, too. The water just reached the white stone!

They were up-stairs now, and there was nothing more to do but to wait until the big gates were opened, and then to sail out.

He watched carefully, and then gave a great shout of delight when they were safely out.

"Is this the only lock?" Peterkin asked.

"Yes," said his uncle, "the only lock. Now we go to the other side of the lake. It is all straight sailing now."

"And tomorrow, when we go home, do we have to down-stairs?"

"Exactly," replied his uncle. "When we start in the morning we shall be on the second stair. When we sail into a lock it will be the lower gates which are kept shut until we are safely in and the big gates close behind us. We shall be on the upper stair until the gateman opens the sliding doors in the lower gates; then the water will rush out, the boat will settle down to the level of the water below, and there we are—down-stairs."

Peterkin listened very attentively, and when he had thought it all out, he asked, "And we shall have to sail out when the gates are opened and go home?"

"Why, yes; but by that time you will be in a hurry to go home and tell mama about the trip and tell Carl that you have as good a key to the lock he spoke of as he has himself."

Peterkin did not understand the joke, but Carl did, and he laughed when he heard it.

"A better key, Peterkin," he said, "for I have never seen a lock."

Peterkin was so impressed by what he had seen that he tried all the next morning to make a similar lock in the little brook near the house.—Selected.

HOME REMEDIES FOR CHILDREN

Written for California Cultivator
By A. M. H.

Prickly heat, a complaint that many children suffer from during hot weather, is really a blood disorder and may be greatly alleviated, if not entirely cured, by a diet free from acids. An old fashioned remedy for cooling the blood is a teaspoon of cream of tartar in water. This frequently gives efficient relief and baths in bicarbonate of soda are good to use as an external application. Another good lotion to use is composed of two drams of sulphate of iron to which has been added two ounces of distilled water. This should be applied with a small soft sponge.

Colic is the complaint from which children suffer most and quick and ready relief may often be given with a drop of peppermint in a little warm water slightly sweetened, for one dose, and a warm application or hot water bottle near the stomach. Some mothers gently massage the child with warm sweet oil or melted vaseline, as it is comforting and will soothe the pain.

An excellent remedy for dysentery and all bowel troubles peculiar to children is made by boiling peach tree twigs in water to make a strong tea and giving one teaspoon after each evacuation. In stubborn cases inject one teacup lukewarm water, with a teaspoon of corn starch dissolved in it, in the morning and at night.

A bottle of boric solution is invaluable

in a family where there are many children, as there is no safer and more effective remedy for small cuts and wounds, and all skin diseases are soothed by being bathed with it. The solution is very inexpensive and easily prepared by putting one ounce of boric acid in an eight-ounce bottle and then filling with boiled or distilled water. This will make a solution that will last an almost indefinite time as more water may be added as the solution is used until all of the boric acid is absorbed.

When baby's skin is chafed, put a little of this solution in a little warm water and sponge the chafed skin after bath, then dry gently, apply a little cold cream and dust with good talcum powder. One of the best powders for infants and young children is made with one part boric powder and two parts of corn starch.

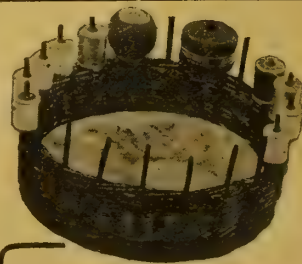
The boric acid solution makes an excellent wash for weak eyes and sore mouth and if used daily it will prevent sore eyes and sore mouth and keep the mouth sweet and clean, and it is a good plan to cut old, soft pieces of linen into small pieces and use a fresh piece each time the child's mouth is washed, as this will not injure the gums or teeth.

PROPER METHOD OF STEWING MEATS

Select the tough pieces of meat for stews. One important fact that Miss Mary Sutherland of the home economics department of Washington state college is endeavoring to impress upon the housewife is the fact that a cheap piece of meat which contains much refuse may be much less economical than a higher priced one, all of which is eatable. Cuts are usually selected from beef, lamb, mutton or veal such as the plate, navel, neck, shoulder, lower part of the round skirt steak, aitchbone etc. Stewing is a method of preparing meat by extracting juice to flavor gravy, and retaining the juice in the remainder by searing the meat. Wipe the meat and cut into suitable pieces for serving. Meanwhile divide into two portions, add one portion to cold water and heat to the boiling point. Set the other portion by browning in a little fat in a frying pan. Then add it to the water and meat. The whole should be cooked slowly for three hours, or until the meat is tender. Meat with some bone and fat makes a richer stew than one made with lean meat. Onions, turnips, carrots, parsnips and potatoes are the vegetables commonly used in stews. The vegetables should be cut into half-inch cubes or quarter-inch slices and added the last hour of cooking. The potatoes should, however, be parboiled five minutes, then added to the stew, allowing twenty minutes for the cooking. Sweet herbs, parsley, a bit of bay leaf, one or two cloves, celery salt, or catsup may be added to give variety. Salt and pepper are the usual seasonings. A nice way is to cook the vegetables separately.

Two pounds beef, three tablespoons flour, one turnip, one carrot, two onions sliced, four potatoes, salt and pepper, half bay leaf. Prepare according to above directions.

Authorities seem to agree in the estimate that in the United States about one-third of the total expenditure for food materials is for meat. They also agree that when the total expenditure



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is one-sixth for meat the dietary will be more economical and also better balanced.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Halves of Ripe Apricots, Cream
Fried Calves' Liver with Bacon
Baking Powder Biscuit
Raspberry Jelly
Coffee

Lunch or Supper

Salmon in Shells Potato Salad
Escalloped Corn
Lettuce and Mayonnaise Sandwiches
Gingerbread Warm Apple Sauce
Milk or Buttermilk

Dinner

Cold Roast Beef
Browned Mashed Potatoes
Stuffed Egg Plant
Summer Salad
Lemon Parfait Potato Flour Cake
Coffee

Soft Gingerbread

One cup molasses, one-third cup butter, one and three-fourths teaspoons soda, half cup sour milk, one egg, two cups flour, two teaspoons ginger, one-half teaspoon salt. Put butter and molasses in saucepan and cook until boiling point is reached. Remove from fire, add soda, and beat vigorously. Then add milk, egg well beaten, and remaining ingredients mixed and sifted. Bake 15 minutes in buttered small tin pans, having pans two-thirds filled with mixture.

Potato Flour Cake

Take four eggs and beat them separately and then together. Add the following ingredients: one cup of sugar, a pinch of salt, one tablespoon of cold water, one teaspoon of vanilla, and a good half cup of potato flour within which is mixed one rounding teaspoon of baking powder.

Lemon Parfait

Pour one cup of thick lemon syrup made by boiling until thick one cup sugar and one pint water, then adding one-third cup lemon juice over two beaten egg yolks. Cook in a double boiler until it thickens. Remove from the stove and when it is cool combine with one pint of thick cream beaten until stiff. Fill molds and pack in ice and salt for three or four hours. The addition of a spoonful of grape juice when serving or some grated pineapple will give pleasing variety.

Salmon in Shells

Remove skin, bones and oil from a one-pound can of salmon. Break into

bits. Add a chopped boiled egg, the same amount of bread crumbs. Stir into thickened cream or white sauce a cup for this amount. Fill clam shells. Top off with butter, and bread or cracker crumbs. Bake till brown and serve.

Summer Salad

Cook a quart of shelled fresh lima beans by boiling in salted water. Do not add butter. When done drain and chill. Peel and cut into very small dice two crisp, tart summer apples and chop fine two sweet, green bell peppers from which the seeds and ribs have been removed. Mix all together with mayonnaise dressing flavored with tarragon vinegar and a few drops of onion juice and arrange on lettuce.

HOW TO CAN STRING BEANS

The string bean season is on. Beans contain considerable protein, the muscle building element, and hence are a good substitute for meat. Several dozen quarts put up now will help out wonderfully in supplying the table with a good wholesome product during the coming winter.

The absence of acid and the presence of proteid substance in beans makes them difficult to put up successfully. The protein makes a fine food for bacteria and hence long boiling or cooking in closed jars is necessary in order to insure complete sterilization. The beans selected should be young and tender; remove strings, break into short lengths, blanch in boiling hot water for 2 to 5 minutes, depending on the texture; then plunge quickly into cold water. A wire basket or porous cloth, such as cheese cloth, may be used for blanching. Pack products tightly into the jars until full. Add boiling hot water to cover the beans and 1 level teaspoonful of salt to each quart. Place rubbers and tops in position. If the mason jar with screw top is used, leave the top about one-quarter turn loose to let the air escape. Economy jars can be sealed tightly; the spring and tin top will give sufficiently to permit the air to escape. Place the jars in the wash boiler containing warm water, using care to have a wire mesh, straw or cloth in the bottom of boiler and cloth or straw woven between the jars. The water in the boiler should nearly cover the jars. Process two hours in water constantly boiling (jumping hot). Remove, tighten covers and invert to test and cool.

Wrap your jars in paper and store. (Note—For elevations over 4000 feet, add 25 per cent more time for processing.)—University of Arizona College of Agriculture.

No kitchen can be attractive that is ill-lighted; and the color of the walls has almost as much to do with this as the size of the windows. Since a woman can, as a last resort, paint the walls herself—adding perhaps a pretty stencil border—there is no good excuse for having them other than cheerful and bright. It is not necessary to be an artist; directions given in the booklets published by our best paint houses are simple and the cost small.

It is the lack of love—love for your neighbors or your God or your dog if there is no one closer—and lack of play—play that will fill your heart with laughter and drive out the cares and worries that "infest the day"—that have given us the drooping mouths and the rounded shoulders and the starvation lines.

Have you made that dustless mop and dustless cloth yet from old underwear or stockings wrung out from oil and aired—three tablespoons linseed oil to one-half pint kerosene?

An excellent furniture polish that can be made at home is three tablespoons of olive oil to one of vinegar. Apply with a soft cloth and polish with flannel.

It is a wise plan to have a good, reliable pair of scales and to use them. Also, it may be wise to let the grocer and market man know that you use them.

Peas and spinach are much better color if cooked uncovered and a dash of soda helps all green vegetables to keep their color.



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vs.

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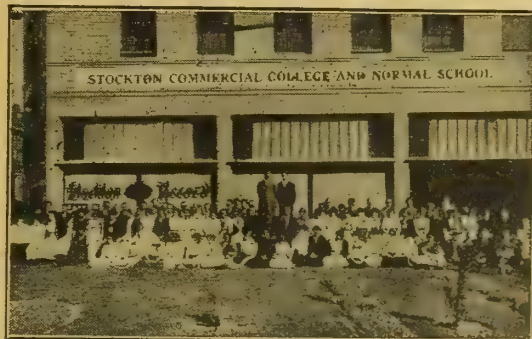
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Helpful Suggestions for the Summer's Bill of Fare

During the hot summer months the heavy heating foods and drinks so general in the colder seasons should be avoided. The careful housewife, having the good health of her family in mind, should make a special study of the proper preparation of cooling and nutritious foods and drinks at this season of the year.

One of the most useful aids to the housewife in this connection is that delicious food product—Cornstarch. It seems a pity that the women of the country generally do not have a better knowledge of the immense variety of uses to which this product can be put. Especially during the hot weather, when a great variety of ice creams, frozen custards, frappes, etc., can be easily and quickly prepared by its use.

Undoubtedly many women have been disappointed when using cornstarch as a result of utilizing an inferior quality. Those who have had the best success with cornstarch recipes in all parts of the country invariably use the well-known Kingsford's brand—which can be obtained at all modern grocers. Order Kingsford's Cornstarch from your grocer today, and ask for the little Kingsford's Cook Book containing many valuable recipes for warm weather delicacies.



San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, July 14, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:

Creamery Extras	26
Firsts	25
Country	22@23
Ladle	20@21

CHEESE

Prices to trade, 1 to 2 cents higher:

California Fresh	13 1/2
Cheddar	20@21
Domestic Swiss	20
Eastern Daisy	19
Oregon Triplets	15 1/2 @ 16
Eastern Twins	16 1/2 @ 17
Longhorn	19@19 1/2
Imported Swiss	30@32
Tillamook	16 1/2 @ 17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts	25
Candled	27
Petaluma—Santa Rosa	27
Northern Case Counts	25
Other Outside Stock	23

Prices to producers:

Hens, lb.	12@16
Roosters, old	9
Broilers, lb.	17
Fryers	17
Roasters, lb.	17
Turkeys	14@16
Ducks	12
Geese	11
Squabs, doz.	1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	7.75
Prime Steers	7 1/4 @ 7 1/2
Heifers	6 1/4 @ 6 1/2
Calves, lb.	8 1/2 @ 9
Sheep—	
Ewes, head	4.50
Wethers	5.00
Lambs, head	4.75@5.00

POTATOES

Wholesale selling prices:	
Idaho Russet	2.40
Idaho Rurals	1.60
Sweets, Yellow	6@6 1/2
Northern Burbanks	1.60

ONIONS

Wholesale selling price:	
Bermudas, Imperial Val., cr.	.75
Boiling Onions, crate	1.35
Crystal Wax, crate	.90@95
Garlic	10@11

VEGETABLES

Wholesale selling price:	
Asparagus, green, lb.	10
Artichokes, Northern, doz.	1.00@1.10
Beets, doz.	30
Beans—	
Wax	5
Limmas	8@9
Green	4@4 1/2
Cabbage, sack	30
Carrots, doz.	30
Cauliflower, doz.	1.50
Celery, doz.	40-80
Chicory	40
Chives, doz.	1.25
Corn, lug	45@50
Sack	1.40
Cucumbers, lug	40@45
Egg Plant, lb.	5@5 1/2
Escarole, doz.	40
Horseradish, lb.	10
Leeks, doz.	40
Lettuce, doz.	25
Mint, doz.	40
Okra, lb.	12 1/2
Onions, Green, bunch	20
Oyster Plant, doz.	40
Parsnips, doz.	40
Parsley, doz.	15
Peas, Telephone	6@6 1/2
Peppers—	
Chili Green	12
Bells	11@15
Radishes, doz.	15
Rhubarb—	
Crimson Winter, box	75
Strawberry	90@1.00
Spinach, doz.	15
Squash—	
Crookneck, box	45
Summer, lug	30@35
Tomatoes, crate	1.10
Lug	1.35
Turnips	30

FRESH FRUIT

Wholesale selling price:	
Apples—	
Alexanders	1.75
White Astrachan, box	1.90
Red Astrachan, lug	75
Apricots, lug	50@60
Avocados, doz.	4.50
Bananas	4@4 1/2
Berries—	
Strawberries, basket	3@6
Blackberries, basket	2 1/2 @ 3
Raspberries, tray	60
Lb.	3
Loganberries, tray	50
Lb.	3@4
Cantaloupes—	
Diamond Pack	1.35@1.40
Pony	1.25
Standard	1.50
Jumbos	1.60

Cherries	8@10
Casabas, doz.	2.00@2.50
Cherimoyas, lb.	20@25
Currants, crate	90@1.00
Figs—	
Two Layers	2.00
Calimyrna	1.25
Black, box	75
White, box	60@1.15
Grapes, lb.	7@8
Nectarines, lug	1.50
Peaches—	
Clings, box	1.10
Freestones, lug	1.10
Fosters, lb.	2 3/4 @ 3
Pears, packed, box	2.40
Plums—	
Climax, lug	1.25
Sonomas, lug	1.25
Formosa, lug	1.25
Satsuma, lug	1.10@1.15
Burbank, lug	90
Green Gage	1.25
Tragedy	1.35@1.40
Wickson	1.25
Pineapples, lb.	5
Watermelons, lb.	1@1 1/2

CITRUS FRUIT

Wholesale selling price:	
Lemons	1.50@2.25
Grapefruit, Seedless	2.25@2.75
Limes, basket	85
Valencias	2.00@3.00
Sunkist	3.50

DRIED FRUITS

Wholesale prices to retailers are:	
Evaporated Apples, Fancy, boxes	7 1/2 @ 8 1/2
Apricots	8@12
Nectarines	12 1/2
Peaches	5@7
Pears, lb.	11@12
Prunes	8@17 1/2

NUTS

Prices named by California Walnut Growers' Association are:

No. 1	16 1/2
Budded Walnuts	20
Jumbos	19
No. 2	12
Culls	9
Peanuts—	
California, Raw	6
Japan	5 1/2
Eastern	7 1/2
Rice Corn	5.00@5.25

HONEY

Wholesale selling price:	
Comb, Fancy, Water White	15@16
White	14@15
Light Amber	12 1/2
Extr. Water White	7@7 1/2
White	6@6 1/2
Light Amber	5
Beeswax	24@25

RICE

Wholesale selling price:	
California	4.25@4.75
Broken	2.75@4.25

BEANS

Wholesale selling price:	
Producer's price not far from one dollar under these quotations:	
Limas	5.00
Bayous	6.00@7.00
Lady Washington	5.50
Pinks	4.50
Black Eyes	6.75@7.00
Lentils	14.00
Small White	5.25
Garbanzos	8.50

HAY

Prices to producer f. o. b. Los Angeles: Following prices are on new hay.

Barley Hay	8.00@10.00
Wheat Hay	8.00@10.00
Tame Oat	9.00@12.00
Alfalfa	8.00@11.00
Volunteer	5.00@7.00
Straw	4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:	
Corn, Yellow	2.15
Corn, White	2.25
Wheat	2.00@2.05
Oats, White	1.95
Oats, Hulled	2.25
Egyptian Corn	2.20
Barley Seed	1.40
Barley, Hulled	1.75
Kafir	2.05
Milo	1.85

Sunflower Seed 7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:	
Bran, Heavy	1.90
Alfalfa Meal	1.15
Alfalfa Molasses, per cwt.	1.20
Beef Scraps	3.00@3.10
Beet Pulp	1.20
Cracked Corn, cwt.	2.20
Cracked Wheat, cwt.	2.15
Cotton Seed Meal	1.80
Bone Meal	1.95@2.05
Meat Meal	3.00@3.10
Bone, Green	1.65@1.75
Charcoal	1.90@2.00
Oil Cake Meal	2.60
Fish Meal	2.15@3.25
Rollod Barley	1.35
Middlings	2.20
Rollod Barley	1.30
Feed Meal	2.25
Scratch Feed	2.10@2.40
Oyster Shell	1.15@1.25

San Francisco Market

SAN FRANCISCO, July 13, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras	26
Firsts	25

CHEESE

Wholesaler to retailer.	
Oregon, Y. Am.	14 1/2
Young America	11 1/2 @ 12 1/2
California Flats	8@11 1/2
Cheddar	20
Oregon Twins	13 1/2

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras	24
Firsts	21 1/2
Select Pullets	21 1/2

Price to producer:

Hens, lb.	13@15
Fryers	20@22
Broilers	18@20
Roosters—	
Young	25@26
Old	9@10
Squabs	1.75@2.25
Ducks	12 1/2 @ 13
Geese	2.50@3.00
Belgian Hares, lb.	6@7

LIVE STOCK

San Francisco prices, gross weight:	
Steers	4@6 1/2
Cows and Heifers	3@5 1/2
Calves, lb., live weight	6@9 1/2
Hogs	4@7 1/2
Wethers	6@6 1/2
Ewes	5 1/2 @ 6
Milk Lambs, lb.	7 1/2 @ 8 1/2
Shorn stock, % @ 1c less	

POTATOES

Wholesale selling price:	
Idaho	1.50@1.75
Idaho Russet	1.50@1.75
Burbanks	1.25@1.50
Oregon	2.00@2.25
Delta	70@90

ONIONS

Wholesale selling price:	
Onions, cwt.	40@75
Bermudas	1.00@1.15
Australian Browns, crate	1.50@1.75
White, crate	75@1.00
Oregon, cwt.	90@1.00
Garlic, new	5@6

VEGETABLES

Wholesale selling price:	
Asparagus, box	75@1.00
Beans—	
String	1 1/2 @ 4
Limmas	5@8
Wax	1 1/2 @ 2 1/2
Celery, crate	50@1.25
Corn, Brentwood, sack	1.50@1.75
Winters, sack	1.00@1.50

WEATHER CONDITIONS

For Week Ending July 10, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Stations	Past Week	Seasonal to Date*	Normal to Date*
Eureka	.20	.20	.06
Red Bluff	.00	.00	.00
Sacramento	.00	.00	.00
San Francisco	.01	.01	.00
San Jose	.00	.00	.00
Fresno	.00	.00	.00
Independence	.00	.00	.00
San Luis Obispo	.01	.01	.01
Los Angeles	.00	.00	.00
San Diego	.00	.00	.00

Temperature Data

—Past Week—	Maxi-mum	Mini-mum
66	52	
96	54	
92	52	
76	52	
82	50	
94	54	
92	—	
82	50	
80	56	
74	56	

Bay	1.75@2.00
Cucumbers	90@1.25
Eggplant, lb.	3@6
Lettuce, crate	50@1.00
Okra, crate	75@1.25
Peas, sack	1.00@2.00
Peppers—	
Bell, lb.	4@6
Chili, Mexican	4@6
Rhubarb	50@65
Squash, Summer, lug	20@50
Tomatoes—	
Imperial Valley, lug	1.50@2.00
Merced, crate	60@85

FRESH FRUIT

Wholesale selling price:	
Apples—	
Red Astrachan	1.00@1.35
Gravenstein	1.50@1.75
Other varieties	40@75
Apricots, crate	50@65
Lug	65@85
Canner's price, ton	15.00@17.00
Bananas, Hawaiian, bunch	1.25@1.50
Blackberries, chest	3.00@4.00
Cantaloupes—	
Ponies	75@1.00
Standard, crate	1.50@2.00
Special	50@60
Jumbos	1.75@2.25
Cherries—	
Blacks, lb.	4@8
Royal Ann	5@7
Ordinary	2@4
Currants, chest	4.00@6.00
Figs, box, single layer	50@65
Double layer	75@1.25
Grapes, crate	1.00@1.25
Thompson Seedless	1.25@1.75
Malagas	1.50@1.75
Gooseberries, lb.	8@10
Loganberries, chest	2.00@5.00
Peaches, crate	65@80
Pears, Bartlett, box	1.25@1.75
Box, loose	50@75
Pineapples, doz.	1.50@2.50
Plums—	
Clyman	60@75
Climax	60@75
Satsuma	75@85
Tragedy	75@90
Raspberries, chest	4.50@7.00
Strawberries, chest	3.00@5.00
Watermelons, lb.	1/2 @ 1 1/2

CITRUS FRUIT

Wholesale selling price:	
Grapefruit, seedless, new crop	2.00@2.50
Lemons	1.50@3.50
Lemonettes	1.00@1.75
Limes, Mexican, case	4.00@5.00
Tangerines, halves	.75@1.75
Valencias	.275@3.50

HOPS
1914

Wholesale selling price:	
Sacramento Valley	7 1/4 @ 9 1/4
Sonoma-Mendocino	10 1/2 @ 12
Oregon Clusters	10 1/2 @ 12

HAY

Under date of July 10, Scott, Magner & Miller say:
The records for the week show the total arrivals of hay at San Francisco to be 3100 tons, as against about 4500 tons each week for the last few weeks. The 4th of July holidays were responsible for a decided interruption to our markets. However, at this writing normal receipts have been re-established and from now on will continue to move along satisfactorily. There appears to be very little trading done recently in the main hay sections. There is a better movement of alfalfa from the Sacramento river district. The quality is particularly nice and what is arriving is being distributed at practically the same prices that prevailed recently for old crop alfalfa. There has been very little straw coming to market.
We quote the average wholesale price of hay in carload lots on today's market as follows:
Fancy Wheat Hay (lt. bales) 13.00@14.00
No. 1 Wheat or Wheat and Oat 10.50@12.00
No. 2 Wheat or Wheat and Oat 8.00@9.00
Choice Tame Oat 11.00@11.50
Other Tame Oat 7.50@10.00
Barley 6.00@9.00
Wild Oat 6.00@8.00
Alfalfa 6.50@9.50
Stock Hay 5.00@5.50
Straw 40@45

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	17 1/2 @ 17 1/2
Barley Feed	1.05 @ 1.12 1/2
Barley, Old Crop Feed	1.02 1/2 @ 1.05
Corn, Eastern Yellow	1.77
Corn, Egyptian White	1.85 @ 9.00
Oats, Red, Feed	1.25 @ 1.32 1/2
Oats, White, Feed	1.40 @ 1.45
Millet	2 1/2 @ 3 1/4
Flaxseed	5 @ 5 1/2
Rye	2.00 @ 2.25
Sunflower	5 @ 5 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	13.50@14.50
Bran, ton	28.00@29.50
Feed Cornmeal	40.00@41.00
Cracked Corn	40.00@41.00
Rollod Barley, ton	24.00@25.00
Rollod Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	29.50@30.50
Oilcake Meal	38.00@39.50
Cocoanut Oilcake Meal	24.00@25.00

Citrus Fruit Market

LOS ANGELES, July 14, 1915.

A half a thousand carloads of Valencia's sold by the Exchange last week will bring to California in gold coin a half a million of dollars. None were sold at exceptionally long prices, but it was good fruit, the market is in fair condition, the general average is most satisfactory. Peaches are coming in in enormous quantities, but with judicious shipping of oranges yet to go there will probably be fair prices.
The lemon story sounds different for last week there were sold in New York City 10,000 boxes of Mediterranean lemons at 90 cents per box. However, the weather is materially improved from the lemon consumer's standpoint and it is possible the greater consumption will soon clear the market of the enormous quantity in the hands of retailers and jobbers. Then the 2000 cars now in warehouses in California will begin to move.
Shipments
Shipments of oranges to date from Southern California since November 1, 1914, 29,472 cars; lemons, 4919; total, 34,391. Last season to same date, oranges, 31,905; lemons, 2261; total, 34,166. From Tulare County, oranges, 5648; lemons, 200; total, 5848. To same date last season, oranges, 5873; lemons, 30; total, 5903. From Northern counties, oranges, 630; lemons, 2. Last season to date, oranges, 405; lemons, 5.

NEW YORK, July 12.—Valencias, two navel, four mixed cars and seven cars lemons sold. Market 15 to 25 cents lower. Lemons about 10 cents lower. Cloudy.
VALENCIAS—

	Avg.
Redlands Best, Bryn Mawr F.G.A.	\$3.55
Orangedale Green, O. O. Groves	2.90
Royalty, Foothill Val. G.	2.95
Celebrity, Foothill Val. G.	2.85
Reliable, S. T. Ex.	3.40
Newhall Ranch	3.65
Premium, Benchley Ft. Co.	3.75
Superior, Benchley Ft. Co.	3.15
Old Mission, xf., Chapman	4.15
Old Mission, fy., Chapman	3.85
Golden Eagle, sd., Chapman	3.65
Rialto Brownie, Rialto Ft. Co.	3.35
Rialto Boy, Rialto Ft. Co.	2.65
Glendora Hgts., xf., A.C.G. Ex.	4.20
Glendora Hgts., Foothill	3.25
Evolution, A. C. G. Ex.	3.25
Charter Oak, A. C. G. Ex.	4.20
Red Ridinghood, S. D. Ex.	3.55
Iris, D. M. Ex.	4.40
Violet, D. M. Ex.	3.85
NAVELS—	
Duquesne	\$2.05
Good	1.80
Crystal	1.95
Red Scroll	2.00
Parrot	1.95
Hawk	1.75
Carlo	1.55
Our Beauty	2.20
ST. MICHAELS—	
Sunnyheights	\$3.20
SEEDLINGS—	
Peasant	\$2.75
VALENCIAS—HALVES—	
Red Ridinghood	\$1.40
ST. MICHAELS—HALVES—	
Sierra Vista	\$1.55

Peasant	1.45
LEMONS—HALVES—	
Trail	\$1.25
Canyon	1.05
Mt. Wilson	1.10
La Habra	1.65
Reliable	1.45
Red Hill	1.90
Mt. Wilson	1.30
Mt. Lowe	1.05
Rossmoyne Groves	1.50
Girl	.95
Arab	1.45
Pup	1.30
Gold	1.50
Comet	1.25
Questa	.90

DECIDUOUS FRUIT SHIPMENTS—
Total to date this season from California, 205 1/4 cars cherries, 392 cars apricots, 324 1/4 cars peaches, 911 1/2 cars plums, 118 1/2 cars pears.

PHILADELPHIA, July 12.—Seven cars sold. Market higher on Valencia's, sizes 216s to 360s. Good demand at prevailing prices. Hot and muggy.
VALENCIAS—

	Avg.
Rialto Brownie, Rialto Ft. Co.	\$3.85
Rialto Boy, Rialto Ft. Co.	3.30
Violet, D. M. Ex.	4.00
Balboa, S. T. Ex.	3.40
El Pavo Real, S. T. Ex.	3.05
La Habra, S. T. Ex.	3.50
Reliable, S. T. Ex.	3.45
LEMONS—	
Blue Ensign, O. K. Ex.	\$1.55
Red Ensign	1.15
White Ensign	1.00
El Dorado, Ea. F. G.	1.05
Reliable, S. T. Ex.	1.50

PITTSBURGH, July 12.—Eight cars sold. Market doing better on oranges, steady on lemons.
VALENCIAS—



Cultivating the Bean Field

	Avg.
Buff	\$3.15
Silver Gate, E. L. C.	3.60
Reindeer, E. L. C.	3.40
Reindeer, Or. E. L. C.	2.85
Golden Orange, A. H. Ex.	3.60
LEMONS—	
As-you-like-it, L. G. F. G. A.	1.00
Blue Ensign, O. K. Ex.	1.65
Red Ensign	1.60
White Ensign	1.50
Commercial, A. H. Ex.	1.00
VALENCIAS—	
Aurora, Amer. Ft. Dis.	\$3.80
A One, Amer. Ft. Dis.	3.40
Venus, Amer. Ft. Dis.	2.80
Quail, O. K. Ex.	3.80
Paul Neyron, S. A. Ex.	3.60
Whittier, S. T. Ex.	3.85
Pico, S. T. Ex.	3.60
Quality, S. T. Ex.	3.50
Campfire, S. T. Ex.	3.40
LEMONS—	
Liberty, E. F. G.	\$1.05
El Dorado	.90
Trail, A. C. G. Ex.	1.65
Canyon	1.20
Red Hill, Or. Ex.	2.15

CINCINNATI, July 12.—Market is unchanged. Seven cars sold.
VALENCIAS—

	Avg.
Redlands Best, Bryn Mawr F.G.A.	\$3.70
Mercury, Bryn Mawr, F. G. A.	3.50
Prairie Chicken, A. H. Ex.	3.45

LEMONS—
Naralimo, Sparr Ft. Co. 1.80
Circus 1.55
Del Oro 1.10
Linwood, Q. C. Ex. 1.45
Limonia 1.10
Glen Ranch .60

ST. LOUIS, July 12.—Nine cars sold. Market easier on Valencia's, unchanged on lemons.
VALENCIAS—

	Avg.
Premium, Benchley Ft. Co.	\$3.25
Superior, Benchley Ft. Co.	3.05
Good, Benchley Ft. Co.	2.95
Pico, S. T. Ex.	3.30
Ranchito, S. T. Ex.	3.20
Monticello, S. T. Ex.	3.05

LEMONS—
Milano, Riv. Ex. \$1.25
Housewife 1.05
Diplomat, Q. C. Ex. 1.50
Envoy 1.25
California 1.00
Mt. Wilson, A. C. G. Ex. 1.80

GRAPEFRUIT—
Navela \$2.25
Carmencia
Acme \$2.05
Good 2.00

CLEVELAND, July 12.—Three cars sold. Market higher on both oranges and lemons.
VALENCIAS—

	Avg.
Mars, Amer. Ft. Dis.	\$3.70
Jupiter, Amer. Ft. Dis.	3.55
Golden Orange, A. H. Dis.	3.85
Prairie Chicken, A. H. Ex.	3.75
Red Crescent, A. H. Ex.	2.75
Carmencia, S. T. Ex.	4.10
Colombo, S. T. Ex.	3.60
Las Palmas, S. T. Ex.	3.25
LEMONS—	
California, A. C. G. Ex.	\$1.60
As-you-like-it, L. G. F. G. A.	1.60
GRAPEFRUIT—	
Prairie Chicken	\$1.40
SWEETS—	
Portola	\$3.45

CHICAGO, July 12.—Trade in oranges is quiet but steady; boxes Valencia's, 3.75 @ 4.00. Lemons, boxes, California, 2.50 @ 3.25; Messina, 1.75 @ 2.25. Cherries, California 10-lb. boxes, 1.15 @ 1.25; Oregon, cases, 24 pints, 1.80 @ 2.00; Idaho white, 1.00 @ 1.25; Lamberts, 2.25 @ 2.50. Peaches, California, 20-pound boxes, 60 @ 80; Texas, bushel, 1.10 @ 1.25. Plums, Pacific Coast, Tragedy, 1.60 @ 1.85; other varieties, 65 @ 90. Apricots, cases, 85 @ 1.00. Red raspberries, Pacific Slope, cases, 24 pints, 1.10 @ 1.75. Cantaloupes, standard cases, 1.75 @ 2.00; flat cases, 75. Apples, new, barrels, best varieties, 2.50 @ 3.25.

USE GARDEN HOSE ON INSECTS

Where city water pressure is available the garden hose often affords the easiest way of checking the ravages of certain insects, states Dr. A. L. Melander, entomologist of the Washington experiment station. Many people have the idea that strong poisons are required in controlling bugs, but this is

buhach or, for the hills, boiling water, or spraying the lawn or plants nearby with strong soapsuds or kerosene emulsion. Spraying the ground with a solution of cyanide of potassium will generally kill them off. Bear in mind this chemical is a deadly poison.

For larger ant colonies of other species bisulphide of carbon, a chemical which can be purchased at any drug store, will be found effective. This substance can be placed in the nest by means of an oil can or small syringe, the quantity required varying from one-half ounce for a small nest to two or three ounces or more for a large one. An oil can with a long spout is a convenient instrument, as it can be inserted into the nests and the liquid injected without its being brought close to the operator's nose, for the fumes of bisulphide of carbon, although not poisonous are nauseating. To facilitate the entrance into the nest of the chemical the ant hole can be enlarged with a sharp stick or iron rod. After the bisulphide of carbon has been injected the opening should be closed by pressure of the foot in order to retain the bisulphide. This will penetrate slowly throughout the underground channels of the nest and kill all the inmates. It is important to remember that while bisulphide is perfectly harmless if kept away from all fire, it is very inflammable and may under certain circumstances explode when ignited.

CITRUS IN SOUTH AFRICA

(Continued from page 53)

planted in Rhodesia are the Washington Navel, Thompson's Improved, Navelencia and Valencia Late oranges and the Villa Franca lemons. The wild lemon indigenous to the country is used chiefly as a stock.

Soils and Irrigation

Excellent loam soils are found and many classes of granite soils, some of which produce very fine lemons. Belts of decomposed sandstone are also found in some parts. Irrigation will probably be found advisable in all the citrus regions of Rhodesia. In portions of Mashonaland under normal conditions of rainfall citrus fruits may be grown successfully without irrigation.

Frosts, Insect Pests

Injurious frosts never occur in Rhodesia. Among insect pests the common soft scale, the Australian fluted scale and the red scale are found. The citrus codlin moth is the most destructive pest.

At present land of all kinds is exceedingly low in price.

CENTURY MAGAZINE

The movement and the color of war have ever been an inspiration to artists, but the latter as a rule, standing outside, have painted only spectacular moments, charges, victories, surrenders, and the like. In this war almost all the young artists of Europe are actually in the trenches and they see it intimately and familiarly as it is. At the request of the Century Magazine, Armand Dayot, French Inspector of Fine Arts and founder and editor of a well-known French art review, made an automobile tour at the front and collected sketches actually made in the trenches by friends of his, including some of the most gifted of the younger French artists. These drawings, fifteen in number, he has contributed to the August Century, where they will appear accompanied by an interesting interpretive text by M. Dayot himself. Sketched in moments of danger, to the sound of bursting shells, or in moments of forced leisure, the pictures and the article together are said to give a memorable impression of the French army in action and at rest. The Lookout, A Soldier's Family at the Front, Digging a Trench, The Card-party, and The Letter are among the subjects represented.

CARE AND REPAIR OF TIRES

The Care and Repair of Tires, a well illustrated book of 50 pages, contains a world of information for the automobile owner in giving proper attention to pneumatic tires. In issuing the book the company seems to be going upon the principle that it is not necessary to cause undue wear of tires in order that their concern may have business, but urges upon all users of its tires, or of any tires, intelligent care. For instance, we have one hint:

"The correct application, care and usage of tires are important things to consider, but it is essential to good service that the correct type and size be adopted. The tires should be large enough in diameter and cross section to carry the load and stand traction strains, which will be influenced largely by the power of the car and the lateral strains to the tire, governed by the tire construction."

We are not informed but doubt not the Firestone Tire and Rubber Company, Akron, Ohio, will be glad to send copy of this book if requested by any auto owner.

THE CONTROL OF ANTS

As a rule ants do but little harm in the garden. However, they are a nuisance and the colonies may spread and make life a burden in the house. The best control measure is usually secured by the liberal use of fresh

AWARDED GOLD MEDALS San Francisco 1915

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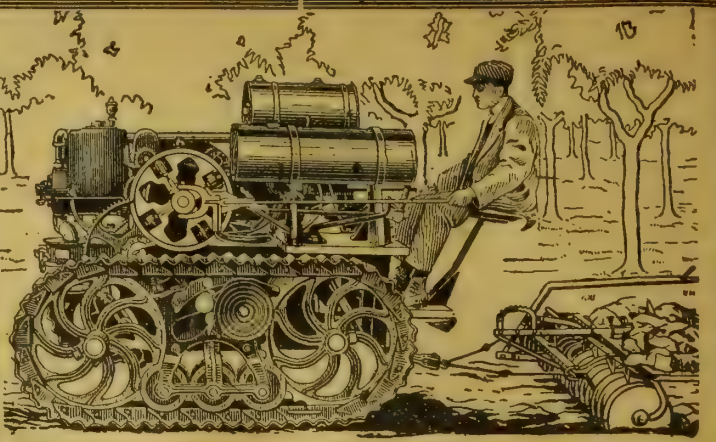
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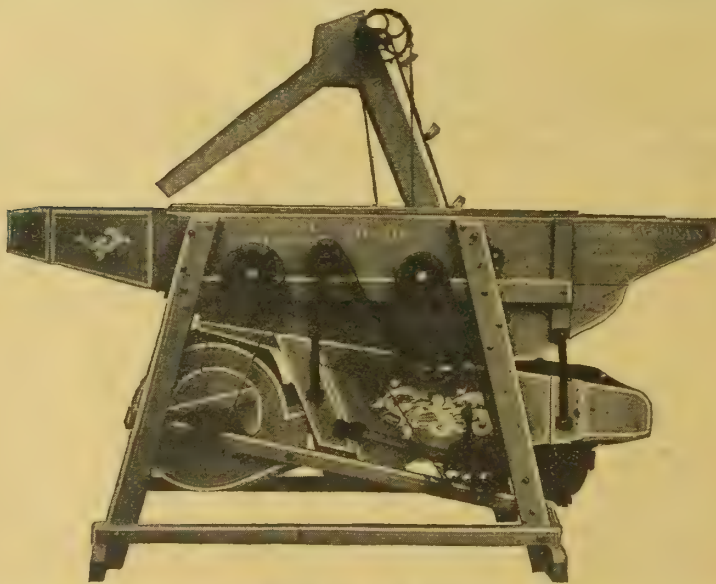
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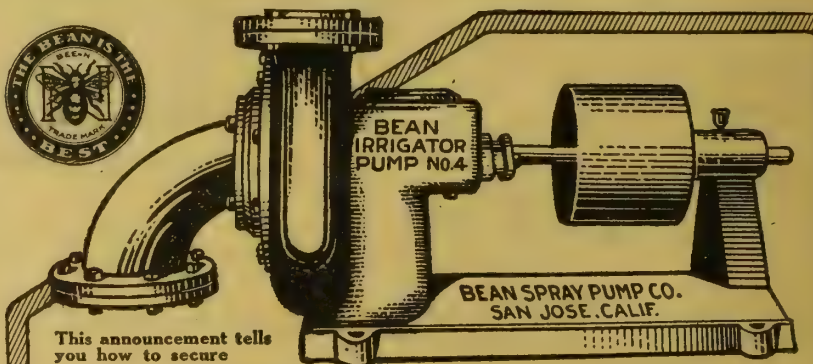
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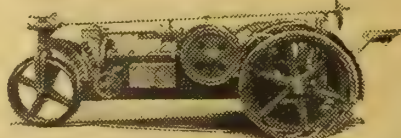
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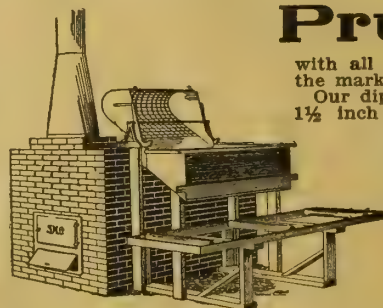
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July 22, 1915

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Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

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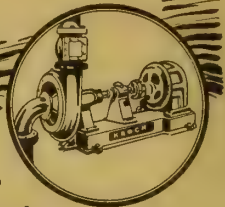
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Vol. XLV No. 4

LOS ANGELES: THURSDAY, JULY 22, 1915

One Dollar Yearly

Inexpensive and Permanent Arbor

Rightly Handled, Cement and Sand Make a Material Which Will Last as Long as the Hills and Which Does Not Involve Large Expenditure



N arbor, like the one in the picture below is so simple and easy to construct that it should appeal to farmers who are interested in making their premises beautiful as well as profitable.

The arbor consists of four octagonal cinder-concrete columns surmounted by undressed timber.

To construct the columns required three cubic yards of cinders and three barrels of cement. The work was done by one man in four days. This mixture, however, is too lean and unsafe for the unskilled worker to use, and the proper proportions of cement, sand and stone are given below.

The arbor is 8x12 feet. The columns are seven and one-half feet high, two feet at the base, and 18 inches at the top. Each has a foundation of concrete two feet six inches each way—in other words, a concrete cube of that dimension. A square form of boards was erected and corner pieces inserted to form the octagon. It was intended to give the columns a finishing coat of plaster, but they looked so well in their crude state that it was never applied.

Simple designs of this type compare favorably with the most costly and ornate conceptions, and are made at greatly reduced cost. Had the columns shown been elaborate in design and surmounted with dressed timbers it is questionable whether the arbor could have been built for less than \$100. Moreover, many people of good taste would prefer the more rude and simple pattern. These columns



An Attractive Concrete Arbor.

take their place in the landscape with the unobtrusiveness of a tree, while their rough surface is better adapted to the growing of vines than columns possessing a smooth surface. In fact, the column on the world-famous terrace at Amalfi are even more simple than these octagonal forms.

Two types of forms for constructing columns are shown in the line drawing. The form at the left is the more economical where it is the purpose to use it many times, but for a single operation, such as the arbor described, the form at the right with braces nailed instead of being fitted with bolts would be more economical.

The concrete could be mixed in the proportion of one part Portland cement, two parts sand and four parts stone or screened gravel, as cinders are not always available on the farm. It is important to remember that cinders do not mean ashes so it would be better to use the stone or gravel.

We recently saw a seat made of a pile of boulders, which had been in the way for some months, combined with a little cement and sand. The workmanship showed up rather crudely in the finished product but that will be mostly covered with vines in a short time and the unsightly boulders will become a thing of beauty and a material convenience. Had a professional done this job he could possibly have made a mortar from lime and sand which would have answered the purpose, but owing to its lack of strength it would have required more

(Continued on Page 95)

Sunburn and Insects Injure Trees

Blistered and Brownd Tree Trunks Give to Borers and Other Insects Opportunity to do Great Injury. J. W. Mills Tells California Cultivator Readers How to Prevent It



N passing through some of the deciduous orchards of Winters and Vaca Valley, one is struck with the table like appearance of the trees.

They have been pruned so as to force the main branches out horizontally, and this has been followed up by clipping back all the upright growth, leaving them bare and exposed to the sun, with the result that the borers have riddled the branches and they are badly decayed. The object was to expose the fruit to the sun so as to procure early ripening, which was secured, but at the expense of the early destruction of the trees. Had those branches been given a heavy coat of whitewash, no sunburn would have occurred.

We recently visited the orchards owned by Thurber Brothers in Pleasants Valley and saw where they had demonstrated to their satisfaction that allowing part of the past summers upright growth to remain to bear the fruit up above all the other growth, gave just as early fruit and

at the same time protected the main branches from sunburn. Part of the upright growth was cut back to produce new growth for the next season's crop. The plan they have adopted is exactly that followed when pruning long pruned grape vines. The long branch is left with a spur near the base from which new growth is secured for pruning and fruiting the next year. This is surely an improvement over the salver shape top. It is following nature more closely and will result in better trees and better fruit.

It is quite common to see branches in the tops of plum, and especially prune trees, with light colored foliage and from that running down to dead branches.

In nearly every case where there is a yellowish green cast of the foliage, except in case of brown mites or red spider, the cause can be traced to sunburn. It does not all happen in one season but gradually increases from year to year. When a heavy crop of fruit is set the

branches bend as the weight of the fruit increases till some branch is fully exposed to the glare of the sun and the branch is held in that position until it keeps its position even after the fruit is gathered. If the bark is not killed then it is slightly injured, and the following season the sun gets in some more deadly work, and the branch is injured so that it never will recover. The most frequent injury caused directly by this overloading process is found in the upper branches but at the same time the main branches are often uncovered and exposed to the sun, causing a more serious loss.

The first stages of sunburn can be detected by passing the fingers around the upper side of the branch where the exposure occurs. A slightly flattened area with an apparent ridge on each side will be felt. The ridge is caused by the border between the growing tissue and the tissue whose growth has been checked by the hot sun.

Remedy

Applying a heavy coating of white-

wash late in the spring so as to cover all the branches one inch and over in diameter will prevent the sunburn and save a large amount of valuable bearing surface. The whitewash spray should be applied as late in the spring as possible, just before the blossoms appear. A good whitewash is made by slacking 30 pounds of good quick lime in plenty of hot water, using enough water to keep the lime completely covered until all action has ceased. While the material is still hot add four pounds of tallow and stir thoroughly. Dissolve five pounds of stock salt by suspending it in a sack in water and add to the lime and tallow mixture.

Dilute to a consistency that will spray well and make a complete white coating over the branches. A nozzle that sprays from above is the best for old trees that have many horizontal branches. The spray material should be strained through a one-fourteenth inch mesh screen before putting in the spray tanks.

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THE MISSION OLIVE

Written for California Cultivator
By J. W. Mills

THERE are some complaints in the southern part of the state that the Mission Olive does not bear full crops regularly or even often enough to bring them into much favor. We found the same failing occurred with this variety during our 14 years' experience in Southern California, and we concluded that climatic conditions were responsible for the failure of not only the Mission but many other varieties in certain seasons. The trees under my observation were thrifty and well cared for, blossomed abundantly, but during most seasons failed to set a full crop and seldom if ever produced a full crop on the west or windward side. The cold winds that blow in May from the coast seemed to cause the bloom to drop.

When proper climatic conditions prevail there seems to be no need of mixing varieties in order to secure a full crop of Mission, Sevillano, Ascolano or Manzanillo olives, provided the trees have not overborne the previous year and have made the proper growth during the preceding summer.

Pruning

The prevailing idea is that the tree must be topped, cut back like a deciduous fruit tree, and this has been my theory and practice until the past few years. The early olives bring the most money, my pickle sizes bringing from twice to nearly six times as much per ton as oil sizes, and not less than 80 per cent of these come from the tops and outermost branches of the trees, those closer in maturing last.

The olive is very susceptible to frost and those in the tops are the last to suffer. It is true that it is more expensive to pick the fruit from the long towering branches, but so long as that is where we get the finest and earliest fruit and the price received is more than double that received from the inferior grades, we will continue to grow our olives high up and far out in the sun shine. Thin out the tops so that from the next tree you can see as much sky through them as you can see top and the pruning will be none too severe. Laterals should be thinned out severely, say one third of them cut out entirely, or perhaps one-half of them, and half of the remaining laterals cut back half or more to grow bearing wood for the coming year. That will leave one-third to one-half of the last season's growth for fruit.

STUDY IN THE CITRUS

The University of California announces the securing of Dr. Howard S. Reed, formerly professor of plant pathology and bacteria at the Virginia experiment station. Dr. Reed will take up the study of various orcharding problems at the Southern California experiment station grounds at Riverside under the direction of Dean H. J. Webber. The questions which Dr. Reed will take up have been under investigation for several years in connection with the regular station work and he will bring to the field new experience and enthusiasm.

Regarding Dr. Reed's work: "The physiological problems of fruits and vegetables, their diseases, and hygiene for the plant have been the subject of a large number of important scientific papers published by Professor Reed since his graduation from the University of Michigan in 1903. In 1907 he won the degree of Ph. D. at the University of Missouri, after receiving special training in botany and organic chemistry and at the same time serving as acting professor of botany there. He was scientist in soil fertility investigations of the bureau of soils of the United States department of agriculture from 1906 to 1908. In

1913 he went to the zoological station at Naples, Italy, to investigate problems in plant physiology. He spent the next year in Strassburg, Germany, pursuing investigations in physiological chemistry under Hoffmeister.

"Among the 60 or more scientific papers which Professor Reed has published are numerous contributions to knowledge and to successful agricultural practice in such subjects as the chemical problems of health and disease in plants, tomato blight, the club-root disease of the cabbage root, foliage diseases of the apple, factors which favor injury from spraying, the effect of fungi on maize, the enzyme activities involved in fruit diseases, the control of the cedar rust of apples, premature blossoming of the apple induced by black rot, and the planting and care of shade trees."

THE SUPPLY OF LEMONS

For the information of our members we have brought together the following data showing the supply of lemons in the United States for three five-year periods and the estimated supply for 1914-15. The years end on June 30.

Five-year average	Imports tons	California Shipments, tons	Total tons	Increase over last 5 years
1900-1904....	78,750	28,620	107,370	...
1905-1909....	74,531	52,963	127,494	18.8
1910-1914....	80,942	63,812	144,754	13.5
Year				
1914-1915....	80,803	76,086	156,889	8.4

The remark is sometimes made that the consumption of lemons has been nearly stationary during recent years. The data however shows that the 1914-15 estimated supply of 156,889 tons exceeded the average supply during the five years, 1900-1904, by 49,519 tons, or 46.1 per cent. This increase in the supply during about 15 years is equal to about 3300 carloads of 30,000 pounds each.

The proportion out of the total supply which was shipped from California increased from 26.7 per cent in 1900-1904 to 48.5 per cent in 1914-15.—F. O. Wallschlaeger, Secretary Citrus Protective League.

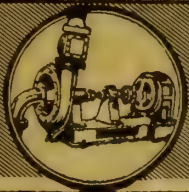
A MAGNIFICENT AVOCADO

We recently saw a 29-ounce specimen of the Spinks avocado, one of the handsomest pieces of fruit we have ever seen. Nor is it the largest this particular tree has produced this season for Dr. Spinks informs us he has picked one which tipped the scales at 37½ ounces, the seed of which weighed three ounces. As the fruit is rather thick-skinned he thinks the skin may perhaps have weighed as much more, but this would leave over 30 ounces of edible fruit. There are almost hundreds of varieties of avocados, both good and indifferent, perhaps more unknown. It will require a few years to test them out as to quality, capacity of tree, vigor, resistance, and other points. Ultimately California will be growing great quantities of this magnificent fruit of the best varieties.

Many people send boxes of oranges east for Christmas and many more would send were the express not so high. It seems to me that the Exchanges could arrange to have Christmas cars go east at certain dates to central distributing points to be shipped from there by express. Many attractive boxes could be made up containing varied California fruits and some pretty California souvenir telling the charms of the state. If the quality of the fruit could be relied upon and advertised they might receive many Christmas orders from the East.

I believe they could add quite a little to the consumption of their fruit besides establishing the California fruit habit, the sentiment adding considerably to the advertising value.—M. Melson Moore, Lindsay.

Irrigation



Forestry

WHAT IS DRY FARMING?

By F. W. Mondell in Dry Farming and Rural Homes

THE term dry farming is applied to certain principles and practices in agriculture the purpose and effect of which are to make possible and profitable the growing of crops without irrigation in regions where, owing to the limited amount and unfavorable occurrence of periods of precipitation, it is difficult or impossible to conduct agricultural operations profitably under the ordinary or customary methods practiced in regions of ample or excessive rainfall and humidity.

The practical application of these principles and practices, while absolutely essential to uniformly successful crop growing in regions where the nominal precipitation is quite limited or which are subject to periods of drouth during the growing season, are also useful and helpful in all regions where the precipitation is not uniformly abundant.

These methods produce valuable results when applied to lands which have become exhausted through continuous croppings without proper fertilizing. They are also highly beneficial in the practice of agriculture by irrigation where the water supply is limited and must be carefully conserved. In a broad and general way the application of the scientific and thorough methods of farming embraced under the general term of dry farming are of very great advantage to the farmers under any climatic conditions under which agriculture is practiced either with or without the use of artificial irrigation.

Dry farming methods embrace a wide variety of practices all tending to the conservation of moisture and soil fertility and vary in their application according to the circumstances and conditions under which applied. While these practices conserve the moisture they also tend to prevent loss and destruction from excessive rainfall or the application of excessive volumes of water in irrigation. Deep plowing, subsoiling, frequent and thorough cultivation, particularly surface cultivation to prevent the formation of a surface crust, summer fallowing, and biennial cropping are among the methods employed to produce the desired results.

Those who have come to think of dry farming as merely a method to make possible the successful cultivation of considerable semiarid areas the world over, which but for these methods could not be profitably utilized under cultivation, should remember that while these are the conditions which have given birth to the modern dry farming movement, they are by no means the only conditions under which dry farming methods are applicable and highly beneficial. It should be remembered that there are few regions where agriculture is practiced under natural precipitation where occasional drouth is not experienced. Over large areas which have an annual precipitation which in the aggregate is ordinarily quite sufficient for growing of crops under ordinary methods, drouth during the growing season, or some part of it, is frequent and often disastrous. In all such regions, which in the aggregate include a major portion of the world's agricultural areas, the practice of dry farming methods, modified and adjusted to suit the conditions, are highly useful and beneficial.

The dry farming movement is therefore not only of interest to the people of the regions, extensive though they are, in many and widely separated parts of the earth's surface where precipitation is normally deficient, but to a marked and important degree to every region where the conservation or distribution of precipitated or applied waters and the valuable soil contents are matters of interest and con-

cern. As dry farming is in principle thorough and scientific farming, it is of vital interest, and the application of at least some of its methods are helpful wherever agriculture is practiced.

WELLS MORE THAN A MILE DEEP

The deepest well in the world is in Upper Silesia in the German empire. It is a diamond-drill hole in a coal field and is 7350 feet deep. A well in the United States which may go deeper, according to the United States geological survey, is four miles northwest of McDonald, Pennsylvania, and about 15 miles west of Pittsburgh. This well, which is being sunk to the Medina sandstone, a bed that elsewhere contains oil and gas, is now 7,174 feet deep. Some gas and oil were struck in the upper part of the well. Between

the depths of 6,830 and 7,100 feet rocks bearing rock salt and salt water were encountered. These are regarded as of Salina age, the same as those carrying rock salts in western New York. The temperature in this well at the depth of 6,775 feet, as recently determined with great accuracy, is 145.8 degrees Fahrenheit.

At Derrick City, McKean County, Pennsylvania, near Bradford, there is a well 5,820 feet deep, which is probably the second deepest well in the United States. Another deep well is on Slaughter Creek, Kanawha County, West Virginia; it is 5,559 feet deep. It penetrated a sandstone at 5,030 to 5,050 feet, and from this depth to the bottom, a distance of 545 feet, the well is in limestone. Near West Elizabeth, Pennsylvania, there is another well 5,575 feet beneath the surface, penetrating into the black shale. Another deep well is being drilled at Gaines, Pennsylvania. This has already reached a depth of 5,500 feet. Deep well drillers in this country of course employ the most improved and effective rigs, but one of the most remarkable of wells, reaching a depth of 3,600 feet, was drilled for petroleum in western China by means of such crude appliances as a

cable made of twisted strands of rattan.

The citrus field of California is widening every year. We note in the *Winters' Express* an item touching upon the planting this spring of 150 acres just north and west of that city. Oranges, lemons and grape fruit will be planted. Two large pumping plants have already been installed to deliver water to these lands. The trees have been secured from the Redlands district.

No man is born into the world whose work is not born with him, there is always work, And tools to work withal, for those who will, And blessed are the horny hands of toil.—Lowell.

What would you do if you hadn't a dream

Shining beyond like a star?

What would you do were it not for the gleam,

The brightness, the sweetness, the joy of that dream

Which beckons and guides from afar?



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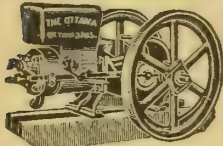
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POWDERY MILDEW OF APPLE



THE powdery mildew of the apple is due to the parasitic fungus, *Podosphaera leucotricha*, the vegetative body or mycelium of which develops as a coating of minute interlacing whitish filaments on the parts of the plants attacked.

The fungus produces two spore stages in its life history; the conidial or summer spores which are produced throughout the growing season and give to affected parts a whitish powdery appearance; the ascigerous stage, which gives rise to the ascospores. The latter is produced only upon the twigs, and the bodies bearing the ascospores may be found buried in the dark felted mycelial mass towards the end of the growing season. The conidia serve to spread the fungus during the growing season. It is apparent that the fungus is carried over the winter by mycelium which hibernates in the buds and also by the ascospores. The part which the latter play in the life history of the fungus is somewhat problematical.

The mildew confines its attacks in the main to young shoots and blossom clusters. Both stem and leaves of shoots may be affected and either killed, deformed, or reduced in size and vigor. Blossom clusters may be blighted and young fruits may be affected later than at the blossoming period. The mildew is now on the fruits of pear also. The amount of blighting of blossoms varies in different localities. Secondary infections may occur on mature leaves to a limited extent.

Control

The control of the disease calls for the employment of two methods, pruning and application of fungicides. In light attacks of mildew it seems probable that pruning alone will suffice, while in orchards where the disease has gained considerable headway, spraying must be resorted to in addition to the pruning.

Pruning

It is known that infested buds on badly mildewed shoots produce seriously diseased shoots the following spring. Spraying will not prevent these infections, so the affected shoots should be removed and destroyed by burning. This may be done at any time consistent with horticultural practice and if not done earlier should be made a part of the regular dormant pruning operations. If mildew is serious it will be advisable to prune out more brush than ordinary to stimulate the growth the following season. In general the pruning practice should aim to eliminate close interlacing of branches, and vigorous shoots of the current year's growth should be cut back one-third to one-half.

Spraying

The time of application of the spray may be given first consideration. It has been demonstrated that winter spraying is without effect on mildew in California. It has not yet been determined whether this holds for Washington conditions or not, but it is probable that such will be the case. The times of spraying to be recommended are as follows:

Just after the petals fall.

In connection with the second spraying for codling moth or earlier if the mildew is serious.

Three or four weeks after the second spraying. It may be necessary to spray a fourth time after a like interval if mildew is serious and conditions continue favorable.

The selection of the fungicide is a matter of considerable importance and should depend in part at least upon what other diseases are present in an orchard. In some sections powdery mildew is the only fungous disease of apples that is present, but in others the orchard must be protected from scab also. In case scab is present the regular lime-sulphur treatment (1-30)

for this disease should prove of value in the control of mildew. The number of sprayings for scab will vary according to conditions and the severity of the disease. Those most generally recommended are as follows:

Just as the blossom buds separate and show pink.

Just after the petals fall.

Ten days to two weeks later.

Experience will show whether the first only, or all of these applications, are necessary. If the mildew is bad additional sprayings may be necessary for this disease alone, and in this case it may be advisable to employ one of the sulphur sprays recommended below.

If powdery mildew is the only disease for which protection is sought one of the following fungicides may be used:

Atomic sulphur or some other finely divided form of sulphur. Atomic sulphur may be used at the rate of 2-6 pounds to each 50 gallons of water. It seems probable that the minimum strength recommended will give as effective protection as the more concentrated solutions.

The iron-sulphide mixture. The rather laborious method described in the United States Department of Agriculture Bulletin 120, 15-16, does not seem to be necessary, at least for the drier sections. The modified Ballard formula is as follows:

Iron sulphate (copperas), 4 pounds.
Lime-sulphur, 33 degrees Baume, 1 gallon.

Water, 200 gallons.

A stock solution of the iron sulphate should be made and one pound to the gallon is a convenient strength.

Fill the sprayer tank, start the agitator, add the lime-sulphur and slowly add the requisite amount of iron sulphate solution. In order to insure complete precipitation of the iron-sulphide a slight excess of lime-sulphur may be used.

The necessary insecticides like black-leaf 40 or lead arsenate may be added to either the atomic sulphur or the iron sulphide mixture.—Agricultural Experiment Station, Pullman, Washington.

CALIFORNIA PEACH BLIGHT

Calling attention to the rapid spread of what they term California peach blight the faculty of the Washington Agricultural College sends out to fruit growers of that state the following regarding the disease and its treatment.

The disease causes a twig and bud blight, a spotting or shot-hole effect on the foliage, and a characteristic fruit spot. Peaches and apricots are most seriously affected, but what appears to be the same disease attacks cherries and plums.

The disease on twigs manifests itself by the appearance of small brown spots with darker border, located on the current year's growth. These may be adjacent to buds or scattered and few in number or sufficiently numerous to coalesce and kill the shoot. At other times a single lesion may spread until the twig is girdled. One of the serious phases of the disease is the invasion of the buds and their consequent death. There may be more or less exudation of gum from the twig lesions or the blighted buds. Since the fruit buds are produced on the one-year-old wood this form of the disease may either reduce or entirely prevent the production of fruit.

The extent to which the disease attacks the leaves varies with varieties and the severity of the disease, but if twigs are affected there will be more or less spotting of the foliage, followed

by the dropping out of the affected tissue, thus producing the shot-hole effect. The spots may be few in number and small or they may be so numerous as to coalesce and form more extended dead areas. Young affected spots show as either red or brown areas, which vary in size from one-sixteenth to one-fourth inch in diameter or sometimes more. In older spots a brown dead area is generally surrounded by a border of red or dark purple, although in some cases the colored border may be lacking. In cases of light infections there may be little or no dropping of the matured leaves, but more serious attacks will cause more or less defoliation.

The trouble is most evident as a fruit disease upon the maturing crop, but delayed invasions of fruit buds may cause more or less dropping of young fruits. Fruits which escape these early attacks may be variously spotted or deformed by later infections. On the peach and apricot the spots are at first small and generally of a reddish purple color. This color character appears to be less constant on the cherry. With the advance of the disease the spots increase in size and the center shows a lighter color which later changes to a dark brown or almost black in some cases. The spots may be few in number or sufficiently numerous to coalesce and form extended dead areas or even involve the entire surface of a fruit. There may be cracking of the seriously infected fruits accompanied by more or less exudation of gum, and badly diseased specimens may be shed before reaching maturity.

The blight is caused by a parasitic fungus known as *Coryneum beijerinckii*. It produces its spores or reproductive bodies in large numbers on minute dark or blackish pustules barely visible to the naked eye on the stem lesions or on the fruit spots. The spore-producing pustules are much less frequent on the leaf spots and in many cases the affected tissue drops out before any spores are produced. No other stage in the life history of the causal organisms is known, although it seems probable that a winter spore-form may be produced on fallen leaves and fruits.

Spraying is the only effective means of control. Special attention should, however, be given to the removal of blighted shoots in the regular pruning operations. It has been found possible to control the disease in California by a single fall spraying with Bordeaux, but in Oregon spring spraying in addition has been found necessary. Although no experiments have yet been carried out in Washington, it seems probable that spring treatment will be necessary under our conditions also.

The following spraying program is offered for trial:

Bordeaux 6-6-50 formula about November 1, or as soon after the late fruit has been picked as possible. In this spraying special attention should be given to secure a thorough drenching of the younger twigs and branches. In case the disease is severe the following additional applications should be made:

Spray two or three weeks after the petals fall.

Repeat the application after an interval of two to three weeks.

If rainy weather favorable to the disease continues a third application of the fungicide should be made. The number of sprayings and the intervals between them should be governed by the frequency of rains and the severity of the disease.

For the spring sprayings several different fungicides are available: Lime-sulphur 1-40 or 50. Bordeaux 2-4-50, or self-boiled lime sulphur 8-8-50. The commercial lime-sulphur and Bordeaux cause more or less burning under certain weather conditions, especially on peaches and apricots. The self-boiled lime-sulphur is suggested for use on account of its less injurious effect on peaches. Its fungicidal value is satisfactory, but the work of preparing it is greater, so it is only recommended for use if the other mixtures prove too injurious.

CONTROLLING THE APPLE BORER

"Worming" and painting the trunks of the trees are recommended to owners of apple orchards as efficient methods of dealing with the roundheaded apple tree borer in a new Farmers' Bulletin, No. 675, of the United States department of agriculture. A heavy application of some paint that will not injure the trees but will remain in an unbroken coat on the bark for two or three months, is effective in preventing the female from laying her eggs in the tree, and greatly reduces the amount of worming, or the removal of the insects with a knife and wire, that must be done.

The roundheaded apple tree borer, the most destructive of a number of similar pests, lays its eggs in or under the bark of apple trees. After hatching the larvae feed upon the inner bark and wood to such an extent that the tree is seriously weakened or killed. The pest is found over the whole of the eastern portion of the United States and as far west as Nebraska, Kansas and New Mexico. In addition to fruit trees, it feeds on service, wild crab and mountain ash trees, which makes it advisable for orchardists to remove these varieties for a distance of at least a hundred yards from their orchard.

The female lays her eggs, one at a time, in an incision she has made in the bark, usually just above the surface of the ground. About 15 or 20 days later the eggs hatch and the larvae appear. When full grown they are nearly an inch and a half in length. They first attack the inner bark, eating out broad, more or less circular galleries and thrusting out through small holes in the bark castings which form little heaps of reddish wood fragments around the base of the tree. During the winter the borers are quiescent but early in the following spring they attack the solid wood, while some of them work their way up the trunk. These last spend one more winter in the tree and then, having passed through the pupal stage, dig their way out and emerge as adult beetles. Three years are required for the insect to complete its development from egg to adult.

Ordinarily, the beetle lives about 40 or 50 days. It is about three-fourths of an inch in length, light brown in color above, with two broad white bands, joined in front, extending the full length of the back; the underparts and front of the head are white. The females rarely fly any considerable distance, so that if the immediate vicinity of an orchard can be kept free from them, there is little danger of a serious infestation.

The most common method of ridding an orchard of these pests is to cut away the bark sufficiently to trace the burrows made by the borer. A hooked wire is then inserted into the burrow and the insect pulled out. If made with care, the wound in the tree caused by this process will heal readily. The castings at the base of the tree serve as an indication of the presence of the borers. Where the burrows are curved or obstructed in some way so that the wire can not be inserted, cotton batting dipped in carbon bisulphid should be inserted and the hole then plugged with moist earth. The gas from the carbon bisulphid will penetrate all parts of the burrow and kill the borer.

In addition to worming, as this process is called, paint is often used to prevent the beetles laying their eggs.

Pure white lead and raw linseed oil, mixed rather thick, will not injure the trees, and when applied to young, smooth bark, will form a protective coat during the egg laying season. It is probable that this is a more effective method than wrapping the trees with building paper, cotton batting, cloth or other materials sometimes used for this purpose. Before painting,

widespread interest in the search for an available source of potash in this country and the apparently promising prospects this locality affords of a considerable commercial production in the near future. The estimate made three years ago that this deposit contains 4,000,000 tons of water-soluble potash salts seems to have been amply confirmed by subsequent develop-

promising immediate source of commercial potash in the United States.

The business man pays special attention to certain fundamental problems. These are: To reduce the cost of producing his product, whatever it may be; to increase the quantity and the quality of the product which is produced at a given cost; to increase the net selling price of the thing which is produced. Community breeding is one of the greatest possible factors in solving all three of these major problems. It enables the individual farmer to have the use of high grade, expensive breeding animals at a less cost than he could if he were operating independently of his fellow farmers—thus reducing his cost of operations or production.

The higher quality of product, combined with cooperative methods of marketing animals and their products which are used among community breeders, increases the net price which the farmer receives.



Two Sprays Working on Large Trees in San Jose Park. The Factory Was Recently Partially Destroyed by Fire.

however, the earth should be removed from the base of the tree for a depth of from three to four inches. The surface of the trunk thus exposed should be first scraped and painted and the earth then replaced. This is necessary, for the beetle occasionally lays her eggs under instead of above the ground.

THE GREAT CREST OF THE SIERRA

Mount Whitney, the highest point in the United States, is not an isolated mountain peak like Mount Shasta or Mount Rainier, but is the loftiest point in the great California crest or enormous saw-tooth ridge of the Sierra Nevada, including many eminences almost as high. Mount Whitney is 14,501 feet above sea level. Among those of slightly lesser height are Mount Russell, less than a mile distant, 14,190 feet; Mount Williamson, 14,384 feet; Mount Muir, 14,025 feet; Mount Langley, 14,042 feet; Mount Barnard, 14,003 feet, and Mount Tyndall, 14,025 feet. The most distant of these is less than 6 miles away.

By a strange freak of nature the lowest point of dry land in the United States is less than 80 miles from the highest. The lowest point is in Death Valley and is 276 feet below sea level. It is said that from this point Mount Whitney can be easily seen on a clear day.

POTASH IN CALIFORNIA

The salt-incrusted valley floor commonly known as Searles Lake, in southeastern California, has lately come into prominence through the

ments. That this amount of potash salts will actually be produced and placed on the market can not yet be considered assured, but so far as can be judged from evidence available it seems that this deposit is the most

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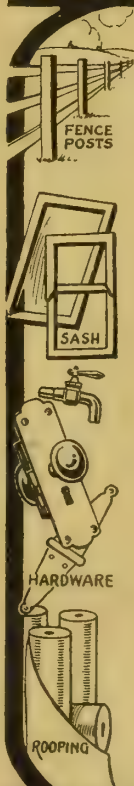
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GROWING OUR OWN PLANTS

Written for the California Cultivator
By Ernest Branton



AR in Europe has taught us many needed lessons in the field of horticulture, mainly on the supply and demand of ornamental and economic plants, the latter for the most part being those from which drugs, dyes, etc., are obtained. The products from the latter class came largely from Germany, but many of the ornamental plants were imported from Belgium exclusively; others from Holland. However, it makes little difference as to the source of supply; the vital question is: May we not produce them as cheaply and of as good quality here, not only in this country but in California?

It is folly to assert that California cannot produce all of them, for we have every variation of climate known to Europe. The cost of production is

Begonias

Begonias are among our very choicest garden plants and all should have a few in shaded or shady corners and other places protected from harsh winds, for the common fibrous rooted sorts thrive under the most ordinary garden treatment.

Begonias are comparatively new plants as we know them, and it is doubtful if Linnaeus, the father of botany, ever saw one. For it was not until the thirteenth edition of his great work that he included some meager descriptions by Plumier, and these are of no value in dealing with the plants today. Nothing of much value in the literature of begonias appeared until a half century ago, since which time thousands of fine hybrids have been distributed in the plant markets of the world. While some care and attention must be given the Rex or large-



School Gardens

the most serious problem, for the American workman is paid more than his European brother. To offset this point we produce some plants that are much superior to those from any part of Europe and are therefore able to command higher prices. In the Santa Cruz section the so-called Dutch or Holland bulbs are being successfully and profitably grown, and many sorts remain untried that will ultimately become staple crops. All over the Pacific coast states drug and dye plants may easily be grown with every assurance of abundant yield; the only question is the cost of harvesting and also of manufacturing the commercial commodity. Among the most serious shortages in ornamentals is in the usual importations of azaleas.

California, Oregon, and Washington each contain many beautiful native species whose climatic requirements are similar to those of the commercial varieties. Why may not we produce at least enough for home use? We also have native rhododendrons, and these are often hard to distinguish from azaleas, also requiring similar conditions and treatment. Then we have many substitutes, such as heaths, poinsettias, chorisemas, hydrangeas, and a host of fine deciduous flowering shrubs that may well replace azaleas. There is no question but the small rancher, the truck grower and the berry grower may produce many of these plants at a profit, wholesaling them to leading nurserymen. This state contains thousands of ranchers who grow and sell to nurserymen asparagus and berry roots and vines, etc., and why not ornamentals? No greater skill and no additional equipment is necessary. Nearly all the plants needed may be grown from cuttings. The subject is worthy of serious consideration on the part of all who are wondering what best to grow on the small home place.

leaved section, and the tuberous sorts, the common ones are very easy to grow.

Our Native Oaks

The oaks of California are variable when considered as a family, and nearly all are beautiful; certainly all are interesting. Why may not plant lovers call together the full collection on the home place? Why leave such work for park superintendents who never will do what is most necessary to awaken and hold interest in our wondrous native vegetation? Out in the rural districts among the oaks are to be found proper surroundings for collection of oaks, and such gathering of fine native material need not be confined to oaks. California has hundreds of species of native plants in demand wherever plants are grown. Grow them in the garden and also collect for sale seeds and plants that grow in your particular locality.

The Curious Cacti

There is no cactus but has a curious form, and if one but starts to make a collection the lure of the curious takes firm hold, and soon the victim has what is known as the cactus craze. But nowhere in the vegetable kingdom, not excepting even the orchids, is it possible to find at once so many curious forms and beautiful flowers. In size they range from an inch to 60 feet high and from the slenderness of a pencil to the thickness of a barrel. The flowers have as great a range of colors and shades as may be found in any family in a wild state; and in this respect few approach it. Every person owning a garden should have a few plants, and if you love not the spiny pincushions grow some of the climbers or the leaf-cactus, known as phyllocactus, for the latter are practically thornless and vie with the orchids and water lilies in beauty of blossom.

DO AMERICANS LOVE FLOWERS?



N Eastern exchange claims that Americans do not love flowers, because they are used among the rich and fashionable in reckless profusion for display rather than enjoyment. It is also claimed that we are not a flower-loving people because we accept botanical appellations for our indigenous plants instead of giving them simple, homely names like the charming ones with which familiar flowers have been christened in older countries.

To this another answers that what ostentatious dwellers in towns are guilty of is by no means to be accepted as a national trait. The place to study the characteristics of a people is not among the very rich, but among those in moderate circumstances who make up the bulk of the inhabitants.

Any one who has driven through New England or the older middle states cannot doubt that there, at least, the people truly love their gardens, and the house plants with which their windows in winter are stocked. Even the humblest dwelling has its row of flower pots, or tin cans, well filled with slips of geranium or other bright flowers; and the hours spent over their gardens by gentlewomen who cannot afford a gardener are the best proof that the affection they have for them is a real and ardent one. We have known many a house mother, burdened with domestic cares, to rise be-

fore day to snatch an hour for weeding or watering her little border that its fragrant contents might be of avail for a friendly gift or an adornment for her own table. It is the rarest thing in a New England village to enter a room in summer and find no flowers disposed about it; and in the winter the eager question, "How are your plants prospering?" often comes before the conventional inquiries after the health of the members of the household. Their new varieties are discussed and exchanged; there are rare chrysanthemums to talk about in autumn and choice tulips and hyacinths to be complimented in the spring, and each one knows what her neighbor's garden is most famous for and who is the most successful in her general management of her pets.

Many women are experienced botanists in their own locality and can tell where every wild flower of the region is to be found. They rejoice too in the discovery of a new weed with as much enthusiasm as an astronomer shows over a fresh comet. Most of the men who live in the country are too busy to give much time to flower gardens, but they show great interest and pride in those so carefully tended by their wives and daughters and are ready enough to lend a helping hand, even though they may pretend to begrudge the space taken from grass or vegetables for what they think it their duty to call an idle diversion. But given a retired merchant with not much to occupy his mind, and the chances are that he will soon be wearing himself out in loving labor among his rhododendrons and roses, taking pride in having the earliest and largest blossoms in his parterre and conferring in a friendly way over the fence with his neighbors who stop to consult with him on the best way of dealing with insect pests.

As to the nomenclature there is this to be said: In older countries the people

(Continued on Page 95)

Bees

and



Their Care

OLD COMB



LD combs cut out from the bottom of the brood-chamber might not contain more than ten percent of beeswax.

Usually the honey in them has been taken out by the apiarist or robbed out by the bees. But at times such combs contain a large amount of pollen which is only dead matter when comes the rendering into wax. The upper part of the combs is always richer in beeswax because it is reinforced every year with new wax at the time of the honey harvest. This is readily proven when we see the bees whitening their combs, which is simply adding new wax. In a similar way the extracting combs are every season strengthened so that they become tougher and tougher, even though no brood is reared in them. Even the section boxes have their combs reinforced when they are used the second season after a failure to fill them and seal them fully the first year.

The lighter the combs, the greater the percent of pure wax in them; such combs as have been used only one or two seasons, if clean, might contain 90 to 95 percent of beeswax.

Owing to these facts and the irregularity of old combs it is impossible to answer the question of how much old combs are worth per pound, especially as the beeswax which they contain has itself a fluctuating value. However we can say that brood combs of Langstroth size contain from three to five ounces of wax in ordinary circumstances. When the value of beeswax is known it only remains to figure the expense of extracting it to reach the value of the combs.

The older the combs of the brood-chamber, the more cocoons they contain and the more difficult it is to extract the wax, as more of it will be absorbed by the residues than in new combs or in super combs, containing mainly beeswax.

Much of the wax rendered at the beekeeper's home is only partly secured from the slumgum, owing to the lack of proper devices or because too little time is taken. The methods used by some apiarists are so crude that I have often heard old beekeepers say that no wax can be obtained from black combs. This is true when the work is attempted with a solar extractor. We are steadily coming to the European custom of leaving to specialists the rendering of the wax from the combs, with profit to all concerned. —American Bee Journal.

BEE NOTES

Ample room should be given in the supers to take care of the surplus, and likewise cut down swarming. Where the ordinary ten-frame hive is used the best preventive is the "shook swarm" plan.

Too much emphasis cannot be put upon the necessity of using full sheets of foundation in the section boxes when comb-honey is being produced, as it not only entices the bees into the section supers much more quickly than when mere starters are used, but it insures the building of straighter and more perfect combs, important factors in the salability of the combs.

The frames of comb used in producing extracted honey should have the combs securely wired in to prevent their breaking down when being swirled around in the extractor.

An excellent plan is to go over every colony and clip the wings of every laying queen, as this will prevent the loss of the swarm in case it emerges in your absence.

If you are at hand when the swarm emerges, it will be an easy matter to find the queen hopping around in the grass in front of the hive, even though the swarm may leave, and she can be returned to the hive and will be there when the swarm returns in quest of her.

The old hive that has been moved should for a few days have its entrance contracted to prevent robber bees making ravages, and in a few days it should have a young queen from one of its queen cells built before the swarm came forth; and once she is laying and enough bees have hatched from the sealed brood, the entrance can be enlarged.

In any case, the supers containing the sections should be taken from the old hive and set over the new hive, as the working force is with the swarm and will finish the combs more quickly than if left with the old hive.

In producing extracted honey, have queen-excluding boards between the brood chamber and the surplus chamber, to prevent the queen laying in the super frames, as it is an annoyance to have unsealed brood in the frames from which the honey is to be extracted.

No queen excluders will be needed when producing comb honey. —Farm Journal.

NORMAL PRODUCTION OF HIVE

An inquirer has asked as to how much a good colony of bees should produce in a year. Perhaps 70 or 80 pounds would be a good season's work under average conditions. They have been known to produce anywhere from 100 to 240 pounds in an excellent season. The same inquirer wishes to know as to the selling price of a colony of bees. That depends much upon the period of the year. Sometimes at the beginning of a flow a colony would command a much better price than at this time of the year after the season's work is done. However, a fair average price for a colony of bees is about five dollars.

Queries

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tanning Rabbit Skins.

How can I tan rabbit skins?—Subscriber, Manteca.

To prepare skins for making ladies boas, muffs, capes, etc., take the skin off whole by cutting from hock joint across vent to hock joint on opposite side and draw the pelt off over the head and cut off at a point back of ears; or, if the ears are to be left intact, let the cutting be done on a line extending around the point of nose. Then place the pelt on a stretcher made of half-inch board six inches wide at the top and four inches wide at the bottom. Cut this in two parts, from end to end. Stretch the pelt over the two, place edges together and rub salt over the pelt while fresh, and then sprinkle with powdered alum and allow it to dry. When about dry remove from boards and rub with the hands until dry. The skin will then be as soft and pliable as buckskin. Place your pelts where there will be plenty of fresh air, yet not in the direct rays of the sun.

Another method is to tack the skin taut, the fur side under, on a board, and after scraping the bits of fat off, moisten all over and sprinkle with a mixture of seven parts salt and one part pulverized alum. Leave about two days to absorb the salt. Then wet it again and repeat the mixture. About the fifth day wet it again and sprinkle with a mixture of two parts alum and one part

salt. When dry it is cured and can be taken off the board. The above is from the Belgian Hare Guide.

Grafting Myrobalan

I have a plum tree which died above graft but has made a sturdy six-foot high tree from the Myrobalan root. Would the fruit be good to eat or preserve or should I graft tree?—Subscriber, Glenn.

The fruit of the Myrobalan plum is sometimes used for preserves but has not much flavor. This variety is very easily grafted and this is the best and most satisfactory thing to do. If grafted to some of Burbank's new Japanese varieties you will get some fruit the following year.—J. W. W.

Paralysis

About a month ago young rabbits running loose seemed to lose the use of their hind legs. Some of them have been so seriously affected that they could not stand.—Subscriber, Napa.

We quote from "Practical Rabbit Keeping" regarding paralysis which we presume is the cause of this trouble. "Paralysis is mostly met with in rabbits under six months of age and is probably the most difficult disease of all to cure. It is gen-

(Continued on Page 90)

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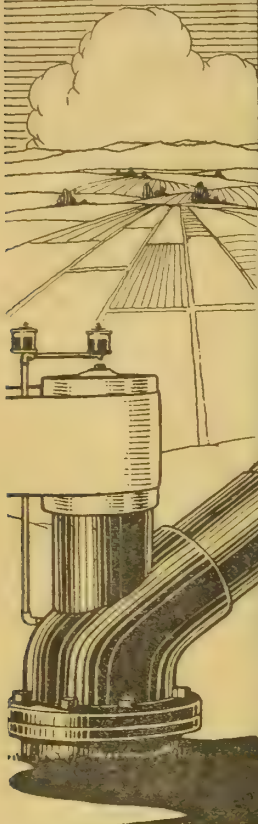
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Economics

on the Farm

"LOAFERS."

By I. D. O'Donnell, Supervisor of Irrigation.

ASK the average farmer who does the loafing on his farm and he will say, "The hired man." With many farmers the terms "hired man" and "loafer" are synonymous. I have known farmers to work themselves into chronic cases of dyspepsia because the hired man was a little tardy; if the farm didn't pay, it was because the hired man didn't hustle.

The object of this short article is not to discuss the merits or demerits of the hired man. My own experience would lead me to say a good word for the hired man. It is my purpose to point out to the farmer that only a small per cent of the loafing on the farm is done by the hired man, and that the farmer should prod along all the loafers and not devote his entire time to the hired man, who probably needs a rest.

Now, Mr. Farmer, you may not have any loafers on your farm, so let us take a look over your neighbor's place. The soil in his fields looks as if it has been poorly cultivated, and you tell me it is that way every year. He does a poor job of plowing, a worse job of making a seed bed, puts the seed in any old way, and then runs on three times too much irrigation water thinking that lots of water will make up for poor cultivation. The result is the soil on the whole farm is loafing—has not worked enough to produce a good crop in years. When people get in that condition the doctors pronounce it a case of hookworm, caused by that overworked parasite. The only cure for this soil is plenty of air and exercise and the right kind of food; this means thorough cultivation and fertilization.

Now take a look at those farm laterals. You say you can irrigate 40 acres in half the time required by your neighbor, and we both know it is because his farm laterals are loafing. In the first place they are never where he needs them and they are so crooked and choked with weeds that water has a hard time struggling through. It is poor policy to pay a hired man to work a farm irrigation system like that; half the hired man's pay is wasted and a poor job of irrigation is the best that can be expected.

Next we will take a look at the dairy cows. Just as we expected — gives them about as much care as a burro expects. I don't blame old Brindle for loafing. She is not a real milch cow anyway. I guess your neighbor will conclude "dairying don't pay," and he does not realize that it is because he does not know the difference between real dairy cows and boarders. Of course it takes more than good cows to make a dairy farm. Cows don't do all the loafing on dairy farms that fail.

Now we come to the pigpen—a number of perfectly hungry hogs loafing around in a dry pen waiting for their feed to be brought to them. If your neighbor had the good of those hogs at heart he would have them out moving around, gathering their food where there is plenty of it. You can't expect much from hogs that loaf around in a dry pen. Of course hogs can not exercise and gather food unless a range is provided for them. It must have been an oversight on the part of our neighbor in leaving the hogs shut up in that pen.

We might go on through all the other departments of the farm and find a lot of chronic loafing. For example, we might find that all the fruit trees, because of lack of a little intelligent pruning and spraying, are loafing on the job—just producing a small quantity of cull fruit and breeding orchard pests. We might find that most of the chickens on the place are just beef type and don't seem to realize they are expected to produce an occasional egg. Of course it is hard work to eliminate all the loafing on the farm,

but it is the farmer who comes nearest to eliminating loafing in all departments who succeeds.

Then there is this about the hired man: I have noticed it is almost a habit with hired men and other men to be most efficient on the most successful farms. Seems as if they take an interest in a proposition that is successful, just as you take an interest in driving a good horse and a good automobile. If you can just keep your soil, your irrigation system, your live stock, and all other departments of your farm from loafing, you won't need to worry about the hired man.

THE BEST RECEIPT

The best receipt in the world by which to prove the payment of a sum of money is the canceled check by which it was paid, bearing the signature of the man to whom it was made out. This is a proof in a court of law that the payee has received the money called for on the face of the check. Such receipts should form a part of the farm records of every man engaged in the farming business.

There is no condition to justify one in doing his business in a slipshod manner. On the other hand there is every condition or reason in the world to justify his doing it in a business like manner; business should be done in a business way.

A check book is an easy and handy thing to carry; much more so than a bag of coin or a book of bills. If you lose the checkbook the finder cannot get any value out of it, and you are not a loser thereby, for no one can get any of your money out of the bank without presenting a proper check for it signed with your name in your handwriting. If you lose the bag of coin or the book of bills the person who finds it can use its contents just as freely and fully as you can; the coin and the bills are legal tender to any one who has them regardless of whom they belong to by right.

The business farmer has learned to carry a check book rather than a purse, using the purse only for small change and incidental expenses. Regular accounts and large items are paid by checks rather than in cash. The men who have tried this method of doing business find that it is more satisfactory to themselves and to those with whom they are doing business, and at the same time it is really easier and better in every possible way.—Business Farmer.

THINGS WORTH REMEMBERING

That your neighbors are good people.

That good neighbors are the result of good neighbors.

That no community can rise higher than the average level of its people.

That discussion, publicity and education will raise the average level of any community.

That the strongest community in the state is the best organized one.—From a Minnesota Agricultural Extension Bulletin.

The bureau of agriculture of the Philippines is sending a demonstration train through the rice growing provinces. It is devoted almost entirely to rice propaganda. Special demonstrators and inspectors from the bureau accompany the car and give lectures to the people of the pueblos, illustrated by lantern slides. Emphasis is laid on the early-maturing varieties of rice, the proper care in seed selection, and the advantages of growing leguminous plants on the rice land to renew its fertility. The train also carries a display of irrigating machinery.

A shipment of 500,000 pounds of California butter was sent to Australia on July 10.

Small Fruits

Vegetables

SAN DIEGO COUNTY'S WINTER VEGETABLE UNION

Written for the California Cultivator
By George H. Wilson, Assistant
County Agent, San Diego.

VEGETABLE producers of San Diego County are organized and are now signing up acreage for the marketing of winter vegetables.

Conditions in San Diego County have been such that a market for vegetables was almost lacking. San Diego has not been able to consume them and the outside world has been closed to the grower. The region surrounding the Southern City of the Sun is blessed with such climatic conditions that vegetables can be grown throughout the winter season. This fact allows growers to supply the best trade of the northern and eastern markets. In order to develop the best markets the product must be limited in kind and variety so only the following will be included at present: Tomatoes, peas, cabbage, lettuce, rhubarb, peppers and celery. Others may be added from time to time as the membership sees fit.

The by-laws of the association have several features worthy of comment:

Every member must be a grower, allowing no antagonistic party a vote in the affairs of the organization.

By the provisions of "Section 7—Membership," a personal note is required. This is used as collateral to borrow money so no capital stock is required and also as a guarantee for the fulfillment of the agreement.

"At the time of uniting with the association and at the end of each year after the incorporation of the association, each member shall give a promissory note, payable on demand to the association. This note shall be for the sum of \$25 and an additional \$1.00 for each and every acre of crops, to be marketed through the association, then owned by the member. But in no case shall this note be for a less sum than \$30. When a new note is given the old one shall be canceled and returned to the maker.

"These notes shall be the property of the association and shall be used by the directors as collateral security with which to borrow needed money for the association's business. Whenever these notes are deposited as security for a loan, all of the members shall individually share the liability in proportion to the face value of their respective notes.

"Each member shall pay a membership fee of \$5.00."

Section 9, Clause 2 is the solution of the downfall of many cooperative organizations. "In case any member is offered a price in excess of the price then obtained by the association, said member shall turn said bid over to the associations for filling from said member's goods."

Thus if an antagonistic commission man or other party tries to break up the organization by overbidding, until the organization is disrupted, the bid will be accepted but used to strengthen rather than weaken the organization. The opponent cannot long follow this practice.

Section 9, Clause 3. Each member shall have a number or mark permanently stamped on every package. Thus any losses from the quality of fruit or packing can be traced to the cause and one producer will not have to stand the losses of a poorer producer. It also allows the manager to aid the poorer grower through showing him how to offer a first-class article.

Section 9, Clause 4. Each member shall have one vote and one vote only. No ring can control the organization, so it must remain distinctly cooperative.

Meetings were held during the last week at Chula Vista, Spring Valley, Nestor and Otay, at which the growers discussed all phases of the project and those who wished to come under the

protection of the association signed up their acreage.

At a meeting held in San Diego July 8 a Board of Directors was elected from which the officers and directors were chosen as follows: H. Culbertson, El Cajon, president; W. R. Edwards, Chula Vista, vice-president; J. R. Blakeston, La Mesa, secretary; First National Bank of San Diego, treasurer; J. R. Blakeston, La Mesa;

A NEW TOMATO ROT.



ANY carloads of Florida tomatoes have been injured or destroyed during the past few months by a "black rot" or "black speck" disease which has been more prevalent this season than heretofore, although known to have occurred in that state to some extent for three or four years. It is reported from some sections that the losses in the fields amounted to 50 per cent and that some large fields were so completely infected as to be almost worthless. In addition to the field losses, tomatoes packed and shipped in an apparently sound condition develop the rot in transit and

though under certain conditions it may attack potatoes. It occurs in the fields, causing black specks on the leaves, stems and fruit. The fruit spots enlarge and become very black, with pin-point-like pustules filled with spores. Both green and ripe tomatoes are affected, most of the spots usually appearing at the stem end. An important point brought out by this study is that the fungus seems to be unable to attack unmutated fruit. Some injury, either by insects, bruises, or natural cracks, must be present to permit infection. It is probable that in many instances where there is little or no field infection the tomatoes become injured during harvesting or packing and are infected in the packing houses. It is likely that by more careful handling and the prompt destruction of all infected material the loss during shipment can be reduced. The disease will



Cultivating with Planet Horse Hoe.

Walter Sharpe, Otay; J. Haughamont, La Mesa Heights; N. Culbertson, El Cajon; J. S. Scott, El Cajon; J. W. Tucker, Nestor; W. R. Edwards, Chula Vista.

Saturday, July 24, in the chamber of commerce at San Diego at 1 p. m. will be held a business meeting of all members of the association, at which time a permanent board of directors will be elected and business will be transacted.

Wishing to aid all such projects which it feels are worthy the department of agriculture in cooperation with the agricultural college has sent G. H. Wilson to act as an assistant to Mr. Weinland, the farm adviser, and to devote all of his energy to aid the growers in organizing themselves for cooperative marketing.

reach their destination in such condition that they can not be sold as first-class stock. A Denver commission house writes that practically every car that has arrived in Denver this year has shown this disease to quite an extent. The Canadian government inspector reports cars arriving there quite ruined.

The department of agriculture has completed and published a technical study of this trouble, extending over three years. It finds that the disease, which will be called the Phoma rot, is new and not to be confused with other tomato rots. The fungus causing it is a parasite belonging to a genus which includes several serious fruit and tuber rots and stem blights of other crops, but this particular species appears to occur mainly on tomatoes,

not develop at a temperature of 44 Fahrenheit, or lower.

Receipts for tolls on vessels passing through the Panama Canal during the month of April amounted to \$442,415, or \$84,112 more than the cost of operation and maintenance, not counting interest on capital investments. April was the first month in which the receipts exceeded the charges.

The Peruvian government has entered into arrangements to put water on a great area of coast lands which will later be sold to colonists on 20 years' payment.

A campaign for members for the newly organized apple distributors is being pushed vigorously.

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Sizes

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2 1/2 Inches
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Sizes

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California CultivatorA Journal of Horticulture and
Agriculture

By

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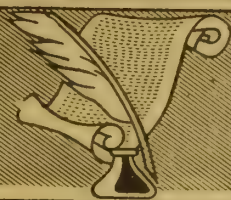
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Entered at the Post Office at Los An-
geles, California, as Second-Class Matter.**Thursday, July 22, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**FOREST LANDS**The forest service of the depart-
ment of agriculture announces that
the president has signed a proclama-
tion eliminating something over 150,-
000 acres of land from the Sequoia
national forest and some 85,000 acres
from the Santa Barbara national forest.
These lands have been found valuable
for agricultural purposes and not re-
quired for reforestation or protecting
the watersheds. Some of these lands
were filed upon prior to their being
included in the forest reserve and
have been in use for agricultural pur-
poses for some time.**MORE COW TESTING**Mr. Rhoades of the California
Milk Producers Association writes
that there is a movement now on
among its members in connection with
an official of the state dairy bureau to
organize an official cow testing associa-
tion within the membership of the
Milk Producers Association. We may
add that this Producers Association
has been recently organized and Mr.
D. M. Herrin is now secretary and
manager. There are now testing as-
sociations operating near Ontario and
Chino. These have proven so profit-
able to every dairyman who has fol-
lowed up the lessons taught by them
that their usefulness will extend.**FRUIT GROWERS REPORT**The proceedings of the 45th
State Fruit Growers Convention which
was held in Los Angeles last Novem-
ber is now being mailed by State
Horticultural Commissioner Cook to
all who registered at that conven-
tion. For the first time these books
are issued through the efforts of pri-
vate parties, the funds for their pub-
lishing being secured through adver-tisements which appear both before
and after the convention reports. The
report is well printed and has a valu-
able fund of information. Those who
did not attend the Los Angeles con-
vention should write to State Com-
missioner Cook at Sacramento for a
copy.**FIGHTING THE PESTS**The board of supervisors of
Butte County has decided to take up
the fight against the yellow star this-
tle which is becoming a serious pest
in portions of that county. This this-
tle is an annual and its cutting at this
period of the year prevents the ripen-
ing of the seeds and the increase of
infested territory another year. Com-
missioner Mills has been instructed to
make a persistent and immediate
fight. We understand he is already
serving notices upon all property hold-
ers whose lands are infested with this
pest. Mr. Mills thinks that three
years persistent campaign will rid the
county entirely of it.**GROWERS IN CONVENTION**The final arrangements for the
46th State Fruit Growers Convention
are made and everything is ready for
the gathering next Monday morning.
The convention proper does not begin
until Tuesday evening, but with the
potato growers, the county horticul-
tural commissioners and others meet-
ing on the two days preceding, it will
be a full week of fruit growers work.
It will be a great convention for there
is a fine offering of talent on the pro-
gram arranged by State Horticultural
Commissioner Cook. The last day,
Saturday the 13th, will be spent on the
exposition grounds, and on Saturday
evening in Festival Hall, addresses
will be given by Prof. John M. Coulter
of the University of Chicago and Prof.
J. G. Lipman, director of the New Jer-
sey experiment station.**AGRICULTURAL FEDERATION**Chairman Van Norman of the
committee on organization of a state
federation of agriculturists has called
a meeting of his committee for the
afternoon of July 28 at Stanford Uni-
versity. This is in connection with
the State Fruit Growers Convention
which will be held in Palo Alto dur-
ing all of next week. Prof. Van Nor-
man has already outlined a constitu-
tion and by-laws for the proposed or-
ganization. It is possible the com-
mittee will materially revise this out-
line or even adopt an entirely differ-
ent plan, but in any case we believe
there is promise of a new organiza-
tion being formed. If it is and the
farmers take the interest in it that
they should we believe an organiza-
tion will be formed which will have
wide influence in bettering agricultural
conditions in the state.**ADVERTISING ARGENTINA**We have announcement from
Mr. Justo P. Zavalla who has written
articles appearing in former numbers
of the Cultivator and is in California
because of scholarships secured in
high schools of his state, San
Juan, Argentina, that he and other
honorary correspondents of the gov-
ernment of San Juan state are pre-
paring a tabulated report of the Amer-
ican industries represented at the ex-
position. This report is such as will
prove of interest to the agricultural
and industrial interests which are de-
veloping Argentina, and we doubt not
is principally to give information tothe people of that country. However,
Mr. Zavalla writes that anyone inter-
ested may address correspondence to
him or to the other correspondents,
care of the Argentine consulate, San
Francisco. The report referred to is
printed in Spanish.**FARM PACKING HOUSES**The department of agriculture
is issuing a circular giving informa-
tion as to the difficulties that will con-
front farmers in arranging for a series
of packing houses located in various
sections where livestock are produced.
The department gives warning of cer-
tain factors which cannot be disre-
garded if producers attempt to put
their own products into the hands of
the consumer. Especially is atten-
tion called to the difficulty of secur-
ing adequate supplies and the magni-
tude of operations which permits of
federal meat inspection, together with
the further question as to whether
farmers of a community are able and
willing to adjust themselves to the
conditions which will be required by
this movement. Until a demonstra-
tion has been satisfactorily made it
would seem advisable to defer the
matter of organizing a complicated
undertaking in the packing business.
In any case the careful observance of
the precautions enumerated cannot be
too strongly urged.**PATROLLING DIFFICULT**We note that the Butte and
Yuba County papers refer to the fact
that power companies seek to enjoin
rice growers from flooding their fields
because it makes difficult proper pa-
trolling and maintenance of transmis-
sion lines over them. These power
companies have been granted rights
of way over certain farms and natu-
rally this flooding makes almost im-
possible the reaching of some of their
towers.Perhaps they are entirely within
their rights in taking this stand, and
perhaps the farmer may be restrained
from the use of his own lands as he
may think proper, but we imagine this
situation will set him to thinking as
to the advisability of granting rights
of way to such concerns over his land.
The minute he does it he loses con-
trol of a certain extent of valuable
property. We need modern improve-
ments and must yield a bit in order
to secure them, but here is one proof
of the value of the long thought for
the farmer to see wherein he may be
signing away more than he intends.**MARKETING SYSTEM**Is our marketing system wrong?
We mean the general plan of handling
products from producer to consumer.
It certainly seems that there are too
many wheels within wheels and some
are persistent in the effort to have
the present system entirely upset. One
subscriber of the Cultivator who has
marketed hundreds of carloads of Cali-
fornia products writes: "Our present
marketing system is wrong in its
wastefulness and should be entirely
changed at once." "So long
as the growers of California continue
to market their products through
wrong channels of trade, just so long
will the wrong channels continue to
absorb by wasteful methods all the
growers profits." "What Cali-
fornia needs is distributing stations
in every town of 1000 inhabitants and
upwards, with several stations in the
larger cities."Possibly our subscriber is correct,
but certainly such an immense busi-
ness as that would call for armies of
skilled people and for generalship in
their handling. We urge California
producers to think seriously before
attempting so great a change in mar-
keting methods.**Agricultural Notes**Manitoba Province has established
a bureau of labor at Winnipeg.Farmers of Tasmania are each year
devoting larger areas to fruit growing.The earnings of tolls for the use of
the Panama canal passed the \$4,000,-
000 mark on June 6.To make paper pulp from cotton
stalks a mill has just been erected at
Greenwood, Mississippi."Mica bran" is now manufactured
by Nebraska and Texas factories for
concrete facing work to produce rock
effects.The Farmers' Cooperative Elevator
Company of Calgary has let contracts
for the building of ten grain elevators
in Alberta, Canada.The International Apple Shippers'
Association will hold its twenty-first
annual convention and apple exhibit
at Chicago, August 4, 5 and 6.Of the licorice paste manufactured
in Spain only ten or fifteen per cent
is purchased in Europe, all the rest
being sent to the United States.The United States geological survey
has just issued a guide book (Bulle-
tion 612) describing the Overland
route from the Missouri River to the
Pacific Coast. Other volumes will de-
scribe the Northern Pacific route, the
Santa Fe route and the Shasta and
coast routes.A curious bronze-colored orange
marked with one or two longitudinal
orange-yellow stripes, but having the
odor of the edible orange and a sweet
juice is on sale in the London mar-
kets and is supposed to be a cross
of the bronze Madagascar and the
Spanish sweet orange.The great demand for cheese in the
war zone has induced many butter
factories in New Zealand to change
to the manufacture of cheese. It is
claimed it takes 2½ gallons of milk
to produce a pound of butter, while
one gallon of milk will produce a
pound of cheese, and the former
wholesales at 32 cents per pound and
the latter at 18 cents per pound. One
company has opened 22 cheese fac-
tories.Hawaiian pineapple growers are
planning to send 20 to 50 carloads of
fresh pineapples to the United States
each week after August 15. This
would mean 2,000,000 to 5,000,000
pounds each month. Heretofore the
Hawaiian pineapples have been sold
in American markets almost wholly
in preserved form, while the West In-
dies have supplied the fresh "pines."
Hawaii has highly developed the
canned-pineapple business, but is
growing an excess for that purpose
and now seeks another outlet.On June 1 of the current year, says
the Scientific American, the number
of automobiles in the United States
reached 2,000,000. To run 2,000,000
cars for one year requires at the very
least 1,000,000,000 gallons of "gas,"
worth \$130,000,000; 20,000,000 gallons
of lubricating oil, worth \$8,000,000;
12,000,000 tires, worth not less than
\$16 apiece, or \$192,000,000; accessori-
es and extra comforts, goggles,
gloves, and caps, \$50 per car, or \$100,-
000,000; garage charges on short tours
(exclusive of gas and oil), \$100 per
car per year, or \$200,000,000; repairs
made necessary by wear, tear, and
accident (exclusive of tires), \$50 per
car per year, or \$100,000,000. Total
running expenses for all cars in use,
\$730,000,000.

Agricultural News Notes



of the Pacific Coast

Northern California

Much work is being done in preparation for the Sebastopol Gravenstein Apple Show, August 14-22.

Orchardists in Santa Rosa are complaining because of serious infestation of aphids and many are spraying with tobacco mixture.

The California Ripe Olive Association, which has just been formed in Northern California, is starting out on a grand campaign for membership.

The bureau of plant industry of the United States department of agriculture has just issued a bulletin on loganberries and blackberries at Sebastopol.

Grasshoppers are doing considerable damage in the district between Gridley and the Feather River. Farmers are using poisoned bran mash to destroy them.

Growers of the Paradise Ridge, Butte County, at a recent mass meeting, discussed the bonding of the district to install a gravity irrigation system to cost \$25 per acre.

In a wool sale at Cloverdale the first of the month several bales of long wool were sold at 27½ cents, short wool at 25. Twelve bales of exceptionally fine light wool brought 28½ cents.

An expert from the United States department of agriculture is making investigations in the vineyards near Yuba City to determine materials which will prevent spread of phylloxera.

There are approximately 40,000 acres planted to rice in this state, 10,000 of which are in Colusa County. Growers in several different sections are calling for more rice mills to handle the crop.

Directors of the Nevada County Cannery Association have decided not to operate the Grass Valley cannery this year. The date of their annual meeting has been changed from December to June.

The West Coast Potato Association will hold sessions July 26-27 at Palo Alto during the week of the State Fruit Growers' convention. This is the first meeting of the association since its organization at Stockton last year.

To the owner of the cow showing the greatest production of butter fat for the 12 months beginning October 1 a cup has been offered by the Business Men's Association of Chico, Butte County. The contest will be conducted by the Gridley Cow Testing Association.

The Anderson Cooperative Creamery of Shasta County recently elected the following officers: President, Fred S. Field; vice-president, T. W. Graham; secretary and treasurer, John Gilman; directors, Dr. C. A. Bell, H. W. Knapp, F. S. Field, T. W. Graham and John Gilman.

Butte County supervisors have voted to institute a county-wide campaign against the yellow star thistle. The county horticultural commissioner is instructed to serve notice immediately on property owners whose lands are infested. There has been much contention over this weed campaign.

Central California

Moles are reported as being a serious pest in Porterville orchards.

Tulare County is still pulling for the State Fruit Growers' Convention in the fall.

Porterville ranchers are experimenting in the raising of beans on dry grain lands.

The Visalia sugar factory is reported as running to its full capacity of 300 tons per day.

Dates have been chosen for the district fair at Merced. It will be held September 23, 24, 25.

The sugar beet harvest of Alpaugh, Tulare County, is estimated at 5000 tons. The work of harvesting has begun.

Watermelons are going out by the carload from Dinuba, Tulare County. Six dollars per ton is the common price.

An examination for apple packing inspectors was held at Watsonville yesterday by the state civil service commission.

Dairymen of the Salida section of Stanislaus County are interested in the establishment of a milk condensary at that point.

Thirty-five thousand dollars has been appropriated by the San Joaquin County supervisors to pay for another block of state highway bonds.

A fall meeting is proposed for the mountain farm bureau centers of Madera County. It is proposed to have exhibits of products at this meeting.

The Modesto irrigation district is constructing concrete gates at the heads of laterals from the main canals to replace the present wooden structures.

A model dairy with perfect equipment is to be installed at the Lemoore union high school. The new buildings and the new stock will be ready at the fall opening of school.

The Turlock Merchants' and Growers' Association, a newly organized co-operative marketing concern, has engaged a sales manager to handle the cantaloupe crop of members.

The light alfalfa crop in the Newman section of Stanislaus County has been investigated by V. C. Bryant of the experiment station of the state university and he has determined it due to excessive rainfall rotting the roots.

San Joaquin County has an assistant farm adviser in the person of C. J. Williams. Farm Adviser Lyons had so many calls that it became impossible for him to fill them all. The assistant is giving particular attention to boys' clubs.

The California Green Fruit Association is sending out notification to all members that a quarter of a cent per package will be levied on all packages of green fruit shipped by members, the funds so collected to be used in advancing the general interests of the association.

County Horticultural Commissioner Rouillard of Fresno County has requested the supervisors to pass an ordinance requiring each packing house or individual shipper handling fruits to register at his office before the standardization bill goes into effect on August 7th.

Southern California

The dove season opens September 1. It lasts three months.

Imperial City shipped a trainload of 35 cars of steers to Kansas City, last week.

Experimental plantings of black-eye beans have been suggested for the Imperial Valley.

Ventura County has 1500 automobiles. This makes one for every 12 people in the county.

Bee Inspector Pleasants of Orange County reports many hives infested with European foul brood.

Brawley has already passed the total carload shipments of last season, with many melons yet to go.

Date palms of the Heber gardens are so full of fruit that it has been found necessary to cut out much of it.

The Calexico district is estimated to have 20,000 head of cattle in pasture. A heavy shipping season is anticipated.

Orange growers of Orange County report a light setting of fruit, some even estimating the crop at one-half that of the present season.

Commissioner Waite of Imperial County recently held up a shipment of Sudan grass seed as it was impossible to distinguish between seed of Johnson grass and Sudan.

An effort is being made to raise \$3000 by subscription at Anaheim, Orange County, to dike the Santa Ana River above the new concrete bridge between Anaheim and Olive.

Shipments of oranges from the Fillmore district of Ventura County for the past nine months are given as over 200,000 boxes in the report of the county horticultural commissioner.

The Jurupa and Arlington sections of Riverside County are discussing with representatives of the Chino sugar factory the possibilities of raising beets next year on their lands.

The Pomona Valley Canning Company made a record run one day last week when it put up more than 40 tons of fruit. Most of it was apricots, packed in gallon cans, for bakers' use.

Walnut growers of the Simi section of Ventura County have formed a packing and marketing association. It will be known as the Simi Valley Walnut Growers' Association. It is capitalized at \$5000.

The record for daily shipments of cantaloupes from the Imperial Valley was broken last week when 237 express cars were hauled out within 24 hours. Most of the cantaloupes go to Eastern markets.

Peach growers north of Chino want a cannery at Chino. They say that they can haul four loads to Chino in a day against two loads to Ontario or Pomona because the haul to Chino would be down grade.

County supervisors of San Luis Obispo County have concluded to buy \$135,000 of state highway bonds, the money to be used in completing the road from Atascadero to Paso Robles. When this section of the road is completed there will be left unfinished only a few miles in the southern end of the county.

The Coast

The egg buyers of Portland have established a grading system on eggs.

A carload of honey was shipped from Yuma one day last week to Ft. Worth, Texas.

Halibut from Alaskan and British Columbia waters are being shipped by express to New York and Boston.

Hot weather and lack of moisture is ripening up the fall wheat in Whitman County, Washington, too rapidly.

The North Portland stock yard reports heavy shipments of hogs received, but condition most unsatisfactory.

Stock men of Arizona are realizing the necessity for putting in water systems. Many wells have been dug on the ranges.

A corn and hog show will be featured at Prosser, Washington, October 22-24. "Forty boys are entered in the pig contest."

Stockmen in the Coconino forest reserve are building a 50-mile drift fence, separating the Verde from the Little Colorado slope.

Grain crops of Cascade County, Montana, are in unusually fine condition. The yield is estimated at 20 per cent above last year's.

Arrangements are being made for a big sale of registered live stock at the Cascade International Stock Show, to be held November 22-27.

The acreage of wheat in Twin Falls County, Idaho, is 30 per cent greater than last year. The crop will be ready for harvest the last week in July.

An effort is being made to pool the peach crop of the Wenatchee Valley, Washington, under general supervision of the Northwest Growers' Council.

Cow testing work being carried on in the Coos Bay section of Oregon is proving most satisfactory. Many high producers are being discovered by the tester.

The warm weather now prevailing in farming sections about Moscow, Idaho, is welcomed by grain farmers as it will ripen off the grain and stop the rank growth of straw.

The State Live Stock Sanitary Board of Oregon has annulled its former quarantine order against cattle shipments from many states and the new order includes only a small portion of the Southeast.

All-day picnic meetings have been in order at local farm bureau centers in the Coos Bay section of Oregon. Dairy instructors from the state agricultural college at Corvallis have been present and addressed members.

At a meeting of the directors of the Oregon Hop Growers Association at Salem the executive committee announced that there is now a membership of 666, controlling 50,000 bales of hops. The association has a capital stock of \$100,000.

Live Stock Commissioner A. J. Splawn of North Yakima has been appointed by the state of Washington to prepare a live stock exhibit for the stock show to be held in October at the San Francisco exposition. He is appointing committees to secure exhibits.



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Live Stock and Dairy



THE PURE MILK BILL

Written for California Cultivator
By Harry A. Chamberlain, Assembly-
man from Los Angeles

AN analysis of the so-called "Pure Milk" bill passed by the recent legislature should prove interesting to those engaged in the dairy industry. Concisely, the purpose of the bill as outlined in its title is to prevent the sale of impure and unwholesome milk, to grade milk and to empower municipalities to establish and maintain an inspection service.

Under the provisions of the new law which will not go into effect until October 1, 1916 in order to allow dairymen ample opportunity to meet its demands, it prohibits, among other things the sale of milk, except in bulk to the wholesale trade, from cows that have not passed the tuberculin test unless it has been pasteurized by the holding process at a temperature not less than 140 degrees Fahrenheit for 25 minutes; milk for drinking purposes shall not be heated above 145 degrees Fahrenheit.

For the purpose of the act milk is graded as follows: certified milk, guaranteed milk, grade A milk, grade B milk and milk not suitable for human consumption.

Grade A milk shall conform to the following requirements as a minimum; if raw, it shall consist of the clean raw milk from healthy cows as determined by physical examination and by the tuberculin test by a qualified veterinarian under the supervision of the health authorities, and from dairies that score not less than 70 per cent on the score card adopted by the United States bureau of animal industry, department of agriculture. The tuberculin test must be repeated annually if no reacting animals are found in the herd. If reacting animals are found they must be removed from the herd and the tuberculin test repeated in six months. All cows are to be fed, watered, housed and milked under conditions approved by the health authorities. All persons who come in contact with the milk must exercise scrupulous cleanliness and must be free from germs of typhoid fever, tuberculosis, diphtheria or other infectious diseases. Absence of such infections shall be determined by cultures and physical examination, to the satisfaction of health authorities.

This milk is to be delivered in sterile containers and is to be kept at a temperature established by the health authorities until it reaches the ultimate consumer, at which time it must contain less than 100,000 bacteria per cubic centimeter. If pasteurized it shall come from cows free from disease as determined by examination by a veterinarian once every six months and shall contain less than 200,000 bacteria per cubic centimeter before pasteurization and less than ten thousand bacteria per cubic centimeter at the time of delivery to the consumer.

Grade B milk shall come from cows that are determined healthy by examination and before pasteurization shall contain less than one million bacteria per cubic centimeter and after pasteurization shall contain less than fifty thousand bacteria per cubic centimeter.

The sale of any milk as grade A or grade B milk which does not conform to the foregoing requirements and such other rules and regulations as prescribed by the health authorities is prohibited. The sale of any milk, raw or pasteurized, as guaranteed milk must first be approved by the health authorities and must be of a higher quality than the grade A milk.

All milk stored for pasteurization must be kept at a temperature established by the health authorities up to the time of delivery to the pasteurization plant and there rapidly cooled after pasteurization to a temperature of 50 degrees Fahrenheit or

below and maintained until the time of delivery to the consumer. All pasteurization plants shall be equipped with self registering devices for recording the time and temperature. All such records shall be preserved for a period of two months and shall be available for inspection by the state veterinarian, state dairy bureau or the local health authorities. Pasteurized milk shall be marked with the day of the week of pasteurization and must be delivered to the consumer within 48 hours thereafter. If milk is repasteurized it must not be sold unless it is labelled "not suitable for human consumption."

All milk not suitable for human consumption may be sold for indus-



trial purposes provided it is heated to a higher temperature than is necessary for pasteurization.

Another bill passed and soon to become a law requires all butter imported into California to be so labeled. It also makes it the duty of the dealers in imported butter to display a sign to that effect in their storeroom. Failure to comply with the law is made a misdemeanor punishable by a fine of not more than \$250 and imprisonment for not more than six months. An amendment to the present law regulating the manufacture and sale of dairy products prohibits misrepresentation as to the name of the producer and the locality where it is produced upon the labels of butter.

BARLEY AS FEED FOR LIVESTOCK

In the southwest barley fits well into the rotation of farm crops. Its ability to grow in the winter is especially valuable. About November 1 is considered the best time to seed barley in southern Arizona. It should make a growth and furnish pasture in February and March, or it may be allowed to ripen for grain or be cut in the milk stage for hay. As winter pasture it has no superior except with a combination of rye and vetch, and it furnishes excellent succulence when little other green feed is available. If one pastures a small portion at a time and allows the stock to pick it down to within three inches of the ground and then removes the animals to another pasture, it may be grazed three or four times, says R. H. Williams, Animal Husbandman of the University of Arizona Agricultural Experiment Station.

Barley should be cut for hay in May. In this way one may obtain one to three tons of roughage per acre. This barley hay is a good feed for stock used with alfalfa. It is a well recognized fact that alfalfa hay, or pasture, is not complete food for any kind of live stock. Farmers would do well to plan a variety of foods to give animals. Barley hay should be one of the chief foods in this connection.

As barley grain is one of the cheapest concentrates, farmers should understand its feeding qualities. There are many false prejudices against barley. Many dairymen refuse to feed it to their cows, claiming that it causes abortion and impaction. With one exception, that of feeding barley to brood sows advanced in gestation, its feeding value is improved about

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It is interesting to note the special use made of barley for stock food by recognized authorities. At both the Utah and California Experiment Stations barley is the chief grain fed to dairy cows to balance alfalfa hay. The world's record milch cow "Tilly Alcartra" was fed on the ration rich in barley. This cow consumed during the year on test 1828 pounds of barley and an equal quantity of oats. These two feeds constituted the grain ration. Mill products also were fed. She consumed 1282 pounds of bran and 1208 pounds of linseed meal. Many other cows on advanced test have been fed a considerable quantity of barley. The grand champion steer "Thick Set Boy," the most noted animal on the Pacific coast during the past two years, was fed a grain mixture rich in barley almost all his life. The first year his grain consisted of equal parts of rolled barley and rolled oats, with a little bran. From May to September, while he was being fed for his final show-yard achievements, he was given about 16 pounds of a mixture of rolled barley, two parts; rolled oats, two parts; and bran one part, by measure, and a small amount of molasses. This feed must have been especially suitable for him because he weighed 825 pounds as a calf, 1400 pounds as a yearling, and 1750 pounds in his two-year old form. His quality and bloom must have been excellent as the former is indicated by his winnings and the latter by the fact that he dressed 71.8 per cent.

RATION WITH OAT HAY AND BEET PULP

From his experience in balancing dairy cows' rations, especially where dried beet pulp is a factor. Mr. Harold McAlister of Chino adds the following to the comment made last week by Professor Woll and Mr. Guy Miller.

I do not think that a good dairy ration can be suggested if oat hay is used as a roughage as it is not as palatable to cattle as alfalfa, it is too low in protein and it is too high in fiber. Oat hay only contains 76,649 calories of fuel value while alfalfa contains 94,936. As it probably takes over 50,000 calories of fuel value for the digestion of a food alone it will be seen that alfalfa will have almost twice the available energy left as oat hay and therefore will be about twice as valuable. If oat hay is thus worth \$8.00 per ton, alfalfa is worth \$16.00 per ton. If, however, oat hay is used, some extremely high protein concentrates must be used to balance the ration. Cottonseed meal can be purchased for about \$22 per ton in the Imperial Valley but the freight would probably add on \$10 to Monterey, which would make it too high-priced in comparison with alfalfa at \$10.50 per ton. Oat hay only contains 4.07 per cent digestible protein so there would have to be fed five or six pounds cottonseed meal to supply the necessary protein. As this amount of cottonseed meal cannot be fed to dairy cattle for a long time without running serious chances of impairing their digestion, cottonseed meal is out of the question with good cows. Coconut cake, which contains 15.4 per cent digestible protein, can be purchased at about \$23 per ton at San Francisco, and the freight would make it about \$27 at Monterey. Coconut cake, when fed with alfalfa and beet pulp, makes a most economical and well-balanced ration. Mr. Frank Morris has recently put all of his cows on yearly test on such a ration and he states that they give about as much milk as when fed the former ration, with a great saving in high-priced concentrates. Coconut cake, however, would have to be fed in such large quantities to balance a ration with oat hay that it would be much more expensive than if a small quantity was fed with beet pulp and alfalfa, and as it is an exceedingly concentrated food it might have a bad effect if fed permanently.

In our own experience we have found beet pulp an excellent feed, hav-

ing lately made several records over 28 pounds of butter in a week on a ration mainly composed of beet pulp, and several over 90 pounds of milk in a day. The same cows have a month or so afterwards given practically as much butter fat on a ration composed entirely of beet pulp and alfalfa. From our string of 30 cows we are now getting over 16 cans of milk daily from the same ration, and I think that the correspondent will probably find that on the whole beet pulp, about eight pounds per day, and alfalfa fed ad libitum at the prices quoted is the best and most economical ration.

MILCH GOAT GRADES

As many have desired to enter the milch goat industry but have been prevented by the difficulty in securing pure-bred stock, we quote the following, written by Winthrop Howland, in a former "Angora Journal," for the valuable hint it contains:

Some eight years ago I secured a doe that as a kid had been caught on Catalina Island from among the wild



One of G. O. Hillier's Fine Bulls.

goats that for probably a century or more have inhabited Catalina.

If ever there was a reward for "bread cast upon the waters" my purchase of this poor little doe Zoble was a case in point. I did not want Zoble, for she was very small, unprepossessing and half-starved, and in wretched condition, but she was so abused and unhappy it seemed the only merciful thing to do to buy her and take her away from her cruel master.

Three dollars was the price I paid for Zoble, and when she was brought to my ranch her coat appeared in so scurfy a condition I feared she might spread some disease among my Toggenburgs, so she was given to a small boy in the neighborhood, who promised to give her proper attention. It had been my original purpose to breed Zoble to my imported Toggenburg buck, Prince Bismarck, but after thinking over the matter this seemed unwise, owing to her unhealthy skin, so she was bred to a part Catalina hornless buck whose pedigree I never was able to fully determine. Under proper feeding and care Zoble thrived and became a perfectly healthy and respectable looking doe, and in due time dropped twin doe kids, oddly enough both hornless, though Zoble herself was horned.

These kids were so promising I bought them and their dam, and their purchase has proved a splendid investment. Poor old Zoble passed away some four years ago, but from her and her first pair of hornless doe kids, Dinah and Daisy, we have in eight years produced 31 does, many among them very fine milking types. At a conservative estimate these 31 offspring are easily worth \$1000.

Recalling the original purchase of Zoble was the large sum of \$3, her progeny have made a very handsome return on the first investment, not counting the value of all the yield of their milk.

Zoble having been stunted as a kid, gave only a very moderate yield, about one and a half quarts per day. Dinah, the best of her first kids, has yielded three quarts per day, and Dot, a half Toggenburg daughter of Dinah, has a record of four and one-half quarts per

day. Delilla, a three-quarter Toggenburg, granddaughter of Dinah, is one of, if not the finest, types of grade Toggenburg does I have ever seen, large of frame, gentle in disposition, with full Toggenburg markings and a record of over five quarts of milk per day.

This season Delilla presented us with a very beautiful seven-eighth Toggenburg doe that has all the points and characteristics of a pure-bred Toggenburg, and we are hoping for remarkable results from this kid when she matures.

From what I can learn of the origin of the Catalina goats they were left upon the island something like a century ago by a Spanish sea captain and undoubtedly were of some good European milking strain. They are marked usually black and tan and white, and their hair is short and straight. They cross especially well with Toggenburgs, and offspring of this cross are unusually hardy and vigorous. When one considers what a valuable type of doe can be produced by careful selec-

tion and judicious crossing of native does with Swiss bucks, there is no reason why those of limited means should not be able to obtain grade does yielding a generous flow of delicious milk at a reasonable figure.

These grade does remain in profit almost like a Toggenburg. Dot was yielding two and one-half quarts daily 10 months after kidding and was with difficulty finally dried up before her next freshening.

Many people who desire to keep milch does instead of cows, hesitate before purchasing pure-bred stock on account of their high price. My advice to them is, secure a good grade doe from a proven line of heavy milking dams, and though there is not the satisfaction of owning a registered pure-bred, nevertheless if an assured flow of milk is what is needed, the well-bred grade doe can be guaranteed to meet the demand.

VALUABLE PAMPHLET

The American Guernsey Cattle Club has recently published a valuable pamphlet for the benefit of Guernsey breeders and the public in general who are interested in knowing what this breed is accomplishing. This pamphlet is of handy size, neatly bound in grey cover, is well illustrated with pictures of the leading cows of the breed and contains much valuable information. In the fore part of the book appear statistics regarding the Advanced Register work which have been compiled in such a way that they make very interesting reading. Fifty-five of these cows have three or more yearly records. The name of these animals, together with the production and the ages at which the records were made are given in detail. What is known as the 35 class leaders or the cows holding the five highest records in each of the several classes from two years of age to five are given as they appear on April 15, together with the average of all cows tested in each class and the average for the breed.

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BUTTER SCORING CONTEST

By L. M. Davis

There were fewer entries and a lower average score at the July scoring of the University of California Educational Butter Scoring Contest than at previous scoring held in May. Twenty-four buttermakers took part, and the average score was 91.79. The butter was scored in San Francisco, July 14, by Mr. T. J. Harris, official inspector of the San Francisco Wholesale Dairy Produce Exchange, L. M. Davis and H. S. Baird of the Dairy Division, and with the exception of those who do not wish their scores published the results were as follows:

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Hot Weather Flavors Common

In some of the entries the effects of hot weather were apparent. These cubes possessed an unclean smothered flavor such as is expected when cans are not thoroughly washed and aired. The dirty can trouble is one which can be overcome by a little attention, and every buttermaker should insist upon cream cans being sent back to the dairyman in a good clean condition. The washing of cans in the creamery is not an enviable job, but it is a very important one. If the can washing is left to a man who is not careful, unclean flavors are bound to develop in the butter. Where cream is gathered and the cans are left on the dairy, there is also a danger unless the dairy is equipped to handle this part of the work properly. Improper care of utensils and insufficient cooling are perhaps the two principal causes of trouble just at this time of the year, and the flavors found in the butter, the low average of this scoring as well as reports from buttermakers, point to these conditions as being largely responsible for flavor defects which prevail at this season. Each year buttermakers will find it necessary to do work along the line of instructing some of their patrons on the proper care of cream, and whether this is done in the form of a letter, a circular or a personal visit it is a matter which must not be overlooked.

Body Defects Reduce Scores

Faulty body is becoming too common in much of our butter. While it is true that some buttermakers may not find that they are sacrificing on price through marketing butter which lacks good body, it is very true that the market value of much butter is kept down by such a condition. At this scoring the most common defect was a gummy, sticky body. Temperatures and methods of working were the probable causes. Some makers are not holding their cream after pasteurizing long enough for it to become thoroughly chilled, with the result that the temperature raises considerably during churning, and when the butter is washed at the temperature necessary under this condition, poor body is found in the butter.

Many buttermakers do not use their thermometer enough, but depend too much upon guess work. It is the business of a buttermaker to make a piece of goods that will hold up well on the consumer's table, and when he finds it impossible to do this his product becomes less valuable. Creameries should not expect their butter dealers to assume the entire responsibility so far as the successful marketing of their output is concerned. All dealers can sell good butter, but few of them can sell poor butter so profitably. Butter which is "off," either in flavor, body, color or salt, is a poor seller, and eventually the creamery will suffer. The creamery policy, therefore, should be to let nothing go undone which will make for the finest marketable article.

Keeping Quality to Be Studied

Twelve of the cubes scored were placed in cold storage and will be periodically examined for keeping quality and shrinkage. Of the 12 cubes nine were made from pasteurized cream to which starter was added, one from pasteurized cream to which no starter was added, two from unpasteurized cream containing starter, and one from unpasteurized cream containing no starter. Pasteurizing temperatures varied from 147 degrees Fahrenheit to 172 degrees Fahrenheit, and amounts of starter from 10 per cent to 40 per cent. These cubes will be examined at several intervals during the next three months.

FOOT AND MOUTH DISEASE
CURED

Dairy herds held at Chicago since the National Dairy Show last October, when the outbreak of the foot-and-mouth disease caused them to be quarantined, are now cured and ready to be sent back home, it is announced by Dr. Hughes of the Chicago Veterinary College, who has been in charge of these cattle since they were interned. If these cattle show no disease and fail to transmit it to others at home, the achievement of having successfully cured it will be a high one, according to government officials and scientists. Dr. Hughes was called in to handle the case when the dairy cattle owners got together to find a solution that would not send their cattle to slaughter and yet save them for future breeding. As the cattle were rated as worth more than a million dollars, the stake was big.

Scientists and livestock officials were skeptical, but the herds were kept together and no animals were shot. When Dr. Hughes had the livestock cured he consulted the bureau of animal industry officials at Washington for permission to take them back home. They wanted to be convinced however so test herds of cattle and hogs were put in with the dairy herds to see if they would contract the disease. They did not find any trace of it in the "clean" cattle 30 days after, so the government put another 30-day trial on the herds, and now that it has ended they must allow the cattle to go.

The disease is now under control in all parts of the country, according to the United States Sanitary Association which met in Chicago a few days ago and drafted a statement to be sent state officials in every state urging conformation to federal rules in keeping the country rid of the disease and permitting the shipment of livestock from one state to another.

Veterinary
Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Paralysis After Milk Fever

Less than an hour after I wrote you regarding treatment of my cow for milk fever she was up and around, seemingly as well as ever, but without any milk. The doctor says he can bring her out all right now as well as back to her milk, nevertheless I would be pleased to hear through the Cultivator the treatment before, at the time and after this trouble.—Subscriber, San Jacinto.

This refers to the article in last week's Cultivator under the same heading. To prevent milk fever, cows should be fed sparingly for two or three weeks before calving and the bowels should be kept moderately free even if it is necessary to give a laxative in the feed. A handful of epsom salts and half as much common salt in the feed once a day for ten days before calving will usually prevent milk fever. When milk fever is present it is best to employ a veterinarian as he is familiar with such work. To start the flow of milk again be sure she gets plenty of drinking water, and rub and knead the udder often and milk her out clean even if very little milk is present at the beginning. The following tonic will also help to start the flow of milk: Powdered gentian four ounces, powdered nux vomica three ounces, bicarbonate of soda four ounces and farina enough to make a pound. Mix and give a large tablespoon once a day.

Bloody Urine

I have recently lost several calves. They will pass blood through urine and die within a day or two. I feed them skim milk and let them loose on alfalfa pasture, there being a small patch of swamp, but water is clear and running.—Subscriber, Devore.

Bloody urine may be caused by Texas fever, anthrax or the eating of some poisonous weeds. Would first advise keeping them away from the swamp as they may be getting poisonous weeds there. Then if the trouble continues employ a veterinarian to find out if it is anthrax or some other trouble.

Scours

What is the best treatment for scours in calves?—Subscriber, Devore.

For the scours give two or three drops of zenoleum once a day mixed with a little water or milk. A few days' treatment will usually eliminate the trouble.

Lameness

Can you tell what is wrong with my four-year-old horse? For the last month or so when I work him he gets very lame. Have looked him all over and examined his feet but could find nothing wrong. He was never sick before.—Subscriber, Tulare.

Is he lame in front or behind? Does he drag the foot or simply refuse to put his weight on it? Is the foot warmer than the opposite one? Is he shod or not? You see we must know something about the character of the lameness before we can even make a guess at the answer.

Community breeding is a big step in the right direction in carrying on the great business of farming.



Poultry for Profit



WHAT IS ROUP?

Written for California Cultivator
By Jean A. Koethen.

THE first sick hen I ever had was a White Leghorn. The first symptom of illness noted was her disinclination to move. She sat all day, refusing to move or eat, with feathers ruffled and drooping head. I do not remember that there was any discharge from nostrils or eyes, but there was from the first a sickening odor which my poultry book told me belonged to roup. As I did not know what to do for her, I did nothing, and she died. Probably she would have died if I had doctored her. I have hardly ever seen a hen prostrated in this way, whatever the nature of her malady, that recovered.

My next roup case, as I remember, was an Orpington pullet. There was a discharge from the nostrils and also from the mouth, and some rattling in the throat, and the same sickening odor I had noticed in the Leghorn. I came afterward to recognize this peculiar, unmistakable odor as the most certain symptom of roup. Some times at night I have gone to the henhouse when I did not know there was a case of roup on the place and have recognized its presence instantly by that odor.

Then there were young chickens with swollen, sticky eyes, and a thick discharge from the nostrils. They were always dull and mopy and most always died. We were living at that time on an exposed hillside, swept by the wind from the ocean and shaded by large trees, and for two years we were never free from roup and colds. I tried bluestone, permanganate of potash, kerosene, quinine, and most of the other remedies recommended by experts. Quinine sometimes had excellent results, but nothing else seemed to work, so I finally gave up doctoring. At the end of the two years we moved back farther from the coast to a more sheltered location, built our houses on a southern slope, facing south, and from that day to this I have not seen a case of roup or even a common cold. Our houses have open fronts but are not always free from drafts. Sometimes in a heavy rain the roof leaks, and I remember one terrific rainstorm when we went out in the morning to find the long house flooded and the hens wading. But no roup resulted. I remember another time when my best breeding pen was housed during a fierce nor'easter in a coop with two or three large cracks on the rainy side,

and still no roup. I have seen the coop where my little chicks were confined nearly washed away in a sudden downpour, for our hillside is steep and our rains heavy, but never a swollen eye or a rattling throat. All these things lead me to believe that drainage, both air and water, is very important in preventing roup. Our dry hillside offers no chance for water to stand, indoors or out; the cold, damp air slides away from us in the same way; and if the dirt floors of our houses ever do become wet, a current of air is sent through which quickly carries away all dampness.

But a suitable location without fresh air in the houses at night is as ineffective as sending a tubercular patient to the mountains and then shutting him up in a tight house with sealed windows. Chickens do not sweat as human beings do. The moisture which in the human passes out through the pores, in a hen passes out through the lungs with the breath, and the air of an unventilated house soon reeks with moisture if many hens are confined in it. Add to this moisture the poison from unremoved droppings, often far too near to the roosts; and the heat from bodies whose normal temperature is 105 degrees or more, to say nothing of the lack of oxygen, which hens need exactly as much as we do, and you have conditions which inevitably breed roup. The birds come out of their sweat box into the chill of early morning. There is a sudden reaction, the head and eyes, always sensitive in fowls, begin to swell, the nostrils to discharge, and soon we have a full-fledged case of roup.

And what is roup? The name is often applied to any sort of cold in the head, but more often limited to the sort of cold which is characterized by lumps or swellings containing cheesy pus. In the Maine station's bulletin on poultry diseases, a compilation which goes very fully into the matter, a distinction is made between simple or non-contagious catarrh and roup. The former is thus described: "In simple, non-contagious catarrh, the affected birds are more or less dull, they are disinclined to move, their appetites are diminished, they sneeze and the mucous membrane is thickened, causing some obstruction to breathing through the nostrils. There soon appears a thin watery discharge which later becomes thick and glutinous, the eyes are often watery, held together by a thick, viscid secretion. In very severe cases the breathing is entirely through the mouth and is accompanied by a wheezing or snoring sound, the appetite is entirely lost, a thin liquid escapes from the mouth and the bird soon becomes exhausted and dies."

Many authorities would, I think, include such cases as those described above under roup, but this bulletin says: "By the term roup we generally understand a more or less putrid discharge from the nostrils, which lasts for weeks or even months. The disease often follows a common cold, to which fowls, especially young fowls and those of more delicate breeds, are much predisposed."

"In the first stages of roup the birds often cough and sneeze and the breathing is noisy, caused by the partial closing of the air passages which become blocked with the discharge from the nostrils. When the air passages are entirely closed the fowl has to open its beak in order to breathe."

"Sometimes a yellowish cheese-like mass forms in the nostrils, growing quickly and pressing the upper walls of the nose upward; if this mass is removed an uneven bleeding surface is left which forms a new cheesy mass."

Sometimes the eyes are mainly affected, and we have what is called "roup of the eyes," which become red, swollen and hot, and then begin to secrete a liquid, "at first clear, then of grey, slimy, putrid character, which dries on the feathers at the side of the head, causing them to stick

together or fall out." Sometimes the secretion becomes a yellowish, cheesy mass in the eye-socket.

I have given these descriptions rather fully because it seems important that we know the disease when we see it and know whether we have the contagious or the non-contagious form. There is still another form of roup in which the throat is affected, yellowish or whitish patches appearing there and in the mouth. This is known as the diphtheretic roup and is the most serious form of all.

Treatments for Roup.

The best way to treat roup is to prevent it. This is axiomatic. When roup or catarrh is discovered in the flock, be it but a single case, the first thing to do is to hunt out the cause and remedy it. Many times an epidemic of roup may be averted by letting fresh air and sunshine into the houses, getting rid of dampness in floors or puddles in runs and cleaning up generally. Go to your henhouse at night and you will learn a lot. Is the air heavy and hot? Open the doors, knock out a side of the house if necessary, but manage somehow to give your birds air you would be willing yourself to breathe. "Put yourself in his place" is a good rule with chickens as well as people. If you enjoy sleeping in the open be sure your fowls like roosting in trees, and it is a good plan to let them do this in summer when the thing can be done.

Having removed as far as it can be done without changing location, the cause of roup, what shall be done with the cases that exist? Remove them first of all from the flock, for real roup is contagious. Put them where they will have an extra amount of sun and air, and if they will eat, an unlimited amount of green feed. This much by the way of sanitation. Medical treatment is not so easy to prescribe. There are treatments enough and roup cures galore. Maybe one is just as good as another. The trouble is that real, genuine roup is very hard to eradicate from the system. Apparently cured, the taint seems to remain in the blood, and it comes back again and again, unfitting the hen for a layer and the cock for a breeder.

In the days when I had roup I did not know what to do for it. Now that I know what other people do I never have roup to practice on, so I cannot say "This is my treatment and bound to cure." I can only quote the doctors and advise everyone to prevent roup if he can.

Dr. Sanborn, than whom there is no better authority in America, recommends applying the following solution to mouth and nasal passages with an atomizer: Extract of witch hazel, four tablespoons, liquid carbolic acid, three drops, water, two tablespoons.

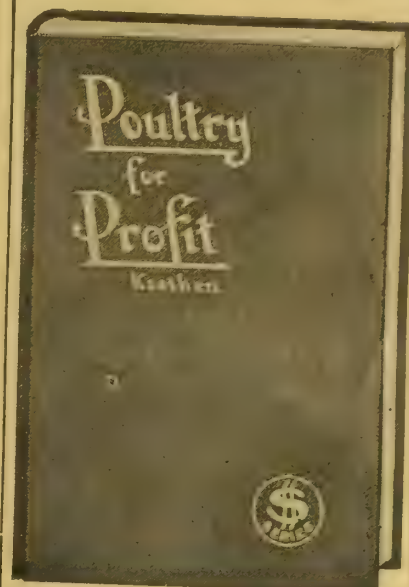
He uses the spray twice a day, squeezing the bulb five times for each nostril and twice for the mouth.

Dr. Salmon, who is connected with the government experiment station, recommends washing the cavities of the nose and throat with peroxide of hydrogen diluted one to three times with water.

Harison and Streit, in Bulletin 125 of the Ontario Agricultural College, recommend the permanganate of potash treatment, which is easier and more generally used than any other. It consists of first massaging the nostrils both upward and downward to loosen the discharge, then dipping the head into a one to two per cent solution of permanganate. The head is kept in the solution for 20 to 30 seconds. The treatment is given twice a day and continued till all symptoms have disappeared.

The use of kerosene is recommended by many practical poultrymen, but it seems to be very severe. I would far rather depend on peroxide of hydrogen, which is good wherever an antiseptic treatment is desired, or permanganate of potash. This latter drug which was formerly much used in drinking water as a preventive and cure-all, has been much ridiculed as "pink tea" and is now held to be worthless as a medicine when used in this way. It kills disease germs in the water, thus preventing the spread of the disease, that is all. Used directly on the diseased tissues, however, it has decidedly antiseptic effect.

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Baby Chicks—Rhode Island Reds and White Leghorns. My guarantee safe arrival, full count, strong, vigorous; fine bred chicks, Leghorns, \$9.00 per 100. Will lay in five months. Reds, \$11.00 per 100. Will lay in six months. J. W. Lyon, Gardena, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

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Poland China Bred Sows—Bred gilts and 4 months old pigs for sale. D. M. Clark, Arlington, Calif.

For Exchange—Equity in Long Beach residence for dairy cows. Smith, 1080 Temple Street, Long Beach, Cal.

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Position Wanted—By experienced dairyman and wife. Capable of taking complete charge of dairy ranch or would like to lease such a ranch. Must be near school. H. J. Bateman, College City, Colusa Co., Cal.

Wanted—A man in every town to sell our Teas and Coffees. It's a chance to get into business without cost. If \$25.00 per week means anything to you write now to C. B. Wheeler, 605 Crocker St., Los Angeles, Cal.

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Wanted—To hear from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

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For Cattle, Hog and Poultry Forage plant now Luther Burbank & Mediterranean Spineless Cactus. ROBINSON CITRUS NURSERIES, R. F. D. 35-A, San Dimas, Cal.

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Ducks—High Class Mammoth Imperial Pekin Ducks for breeders. Also young ducks and eggs for sale. Best stock in California. Stone Canyon Poultry Farm near Sawtelle, California. P. O. Address, Sawtelle, Sunset phone, Santa Monica 565 M.

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For Sale—200 stands of bees in eight frame, two-story, standard hives at \$3.50 a stand. Also 500 stands, two apiaries, in two-story, ten-frame, standard hives at \$4.50 a stand. Apiaries fully equipped for extracted honey. Will sell or lease locations. H. J. Warr, R. F. D., Box 10, Ferris, Cal.

FOR EXCHANGE

For Exchange—Owners only; Boston suburban home, value \$8500, clear; 12-room house, perfect repair, central, best street and neighborhood. Want 10 acre ranch; S. D. Co. preferred, near coast, young trees, good house; submit. W. C. Corey, 220 Devonshire St., Boston, Mass.

TURKEYS

Eleven White Holland Turkey Hens and one fine tom. All mature birds and strong breeders. Excellent layers. H. McKusick, Box 733, Calexico, Cal.

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For Sale—Fine blooded Scotch Collie dogs. 3 months old, 2 males (Sir Bruce 2d and Don Rob Roy), white and tan, white collar and points. Value \$50 each, price \$20 each. 2 females (Mona 2d and Princess Moneta), price \$15 each. Leslie Gay, 2819 Idell St., Los Angeles. Both phones.

QUERIES

(Continued from Page 81)

erally the hind quarters that are attacked, and the rabbit becomes so powerless that it drags its hind legs along the hutch floor in a most pitiable manner. The actual cause of the complaint is not known. Some fanciers attribute it to diseased kidneys, others to inbred weakness and want of vitality. Isolated cases of permanent cures have been heard of, but in all probability the trouble was really cramp due to a damp hutch and filthy environment." It would be well to remove at once to dry, clean quarters.

Planting Avocados

A subscriber who has avocado seedlings six feet tall writes regarding transplanting and whether he should top them back. Mr. F. O. Popenoe answers: "The trees should be cut back heavily and balled with as large balls as possible. After transplanting keep well watered, and in a couple of months the new growth will come rapidly. This new growth can be successfully budded this fall, going through the winter as dormant buds. Next year the trees will make a large top. The

budding should be done in late September or in October."

Pure Milk Law

Will the pure milk law affect the small one and two-cow dairies? If I pasteurize milk must I have my cows tested?—Subscriber, Los Angeles.

We call the attention of our inquirer to Mr. Chamberlain's article in this issue of the Cultivator. In any case it is more than a year yet before the bill is in effect. In the meantime the Cultivator will investigate more fully its requirements affecting the small dairyman.

Asphaltum Paint for Roof

For a subscriber who wished information as to the use of a cheap oil or asphaltum paint for outbuildings we have asked Mr. J. L. Quinn of the Standard Oil Company as to the use of oil for such purposes. From his letter which follows we take it that a heavy grade of oil may be used, especially where felt roofing is to be preserved.

"Have to advise that D-grade Calol asphaltum, 50 to 60 penetration, thinned down to the required amount with distillate, may be used for painting outbuildings. In order to mix this the D-grade should be heated until liquid, should then be removed from the fire and the distillate added in small quantities and well stirred, taking care that the distillate does not inflame. For saturating felt roofing, D-grade Calol asphaltum, 60 to 70 penetration, should be used alone and applied hot at a temperature of about 300 degrees Fahrenheit.

Poison for Squirrels

Mr. J. C. Cox of Hemet gives below his manner of preparing poison for squirrels, rats and rabbits, and advises that is surely does the work:

"Take the white of eight eggs and beat as for frosting. Add one pint sugar and two bottles of powdered strychnine. Stir thoroughly, then put in one gallon of dry wheat or as much as the mixture will cover. It should be mixed in a two or three gallon bucket and stirred with a large iron spoon. The poison should be placed on hard ground or rocks near the squirrel dens, but not in the holes. For rabbits scatter the grain around the edge of the field in the evening. The poison should be placed as soon as it is mixed. If farmers will use this faithfully the squirrel nuisance will soon be abated."

Storing Potatoes

An inquirer wishes to know how he can hold for a time his spring grown crop of potatoes and asks in regard to the old-time "pit," in which potatoes and apples were kept through the winter in the East, covered with a layer of straw, on top of which was a foot or two-foot layer of soil. We believe this scheme would work; however, would advise careful trial for the first season. Would make the layer very thick, sufficient to keep a perfectly even temperature. Of course, it is well known that the spring crop of potatoes is not considered a good keeper, but at this time so many have been thrown on the market that prices are very low, and it is thought perhaps that if held a few weeks longer better prices may be obtained. Mr. Guilford states: "I should think this scheme would work all right. There would need to be a good, thick layer of dirt, 18 inches would be better than a foot. As you have stated, it is simply a matter of keeping them cool enough. Another thing that might work would be an excavation like this with some arrangement for opening both ends at night to let a current of cool air pass over the potatoes, closing up these openings in the day time. I know a house in the Sacramento Valley where the temperature is kept down to 78 by opening up at night and closing up tight in the daytime. An underground cellar that could be opened at night and closed in the day time would be the best arrangement for storing potatoes."



AT SAN DIEGO

The above is a view of the Sacramento Valley Building at the Panama-California Exposition at San Diego. Within it the great valley at the Northern end of the state has placed a magnificent exhibit of its productions. It has sometimes been charged that the exhibit at San Diego is more of a local nature than that at most of world's fairs, and in this respect we may correct this impression, for San Diego does not claim to be producing a world's fair. It is an exposition of the Southwest and it is absolutely true to name, and a more wonderful exhibition of products, customs and especially of architecture of the Southwest has never been made. The whole atmosphere of San Diego is that of Southwest America and it is well worth a visit for that one reason.

In the foreground may be seen the exposition pigeons which are becoming famous the world over, and when it comes to photographing we question whether any other live thing has been any more photographed than these pigeons.

GLUE

Prepared glue, such as LePage's and Imperial, is the most convenient for general use, except when large quantities are required, the prepared or liquid glue is cheaper and more easily handled than the flake or ribbon glue.

The prepared or liquid glue may become too thick to work well. Often times by putting the can of glue in a pot of hot water the glue thins enough for use.

The addition of a small amount of vinegar permanently thins the glue, at the same time does not injure its quality.

Prepared glue does not set as quickly as ribbon glue, therefore the clamps must be allowed to remain on the parts glued longer. In preparing surfaces for gluing care should be exercised in getting them true and "out of wind," else the strain under which they are clamped in the gluing process is quite apt to crack the glue, and the joint thereby be rendered useless.—L. D. Crain, Colorado Agricultural College.

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—All colors of shingle stain except gray that should be selling at 65c to 75c per gallon, now going at 50c per gallon, in five-gallon lots.

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1 ply Double Sanded, per roll \$1.15
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3 ply King, per roll \$1.75
Snow-white Roofing Paper, per roll \$1.75

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COMPLETE WITH VITREOUS CHINA BOWL AND TANK

—These toilets are perfect in every respect and fully guaranteed. Made by the famous Johnson Bros., Hanley Limited, England. Both bowl and tank are of vitreous china, and wood seat is fitted with finest post hinges. Other dealers would charge you at least \$20 for toilets like these. —Special steel enameled bath tub \$8.00. Other sizes \$8.50, \$9.00 and \$10.00.

Freezers 1/2 and Less

—Dana Ice Cream Freezers always command full price. Here they are at 1/2 and less.
2-quart size, reg. \$1.75, now \$.75
3-quart size, reg. \$2.25, now \$1.00
4-quart size, reg. \$2.50, now \$1.25

\$2.25 House and Floor Paints, \$1.25 Gallon

—Secured by us at bankrupt sale; lot includes many famous brands. Good assortment of colors.

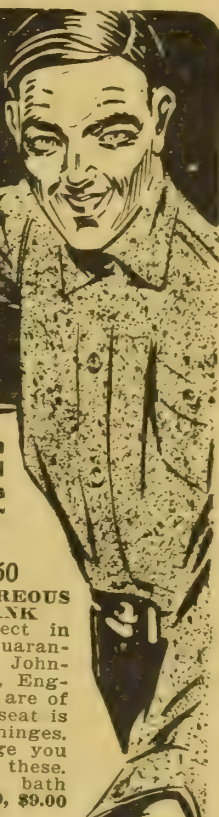
\$2.50 Varnish Remover, \$1.75 Gallon

—The famous Hi-Lo varnish remover, said by many to be the most practical of the many varnish removing preparations.

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—Made especially for use in kitchens, bathrooms, etc., as steam and heat do not affect them. Can be washed with soap and water without injury.

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Avoid Heating Foods in Hot Weather

Bill of Fare Should Vary Greatly in Winter and Summer

About this time every year the magazines and newspapers are in the habit of publishing a list of "DON'TS" for hot weather. One of the most prominent of these is "Don't eat heating foods during the summer season." Up-to-date housekeepers, having the good health of their family at heart, are realizing more and more the necessity for varying the bill of fare radically in winter and in summer.

In order to prepare an attractive variety of warm weather foods and desserts, every woman should have a thorough knowledge of the possibilities contained in that delicious food product—Cornstarch. While cornstarch is an all-the-year-round article of diet—it is of special value in the preparation of the most delicious ice creams, frozen custards and frappes imaginable. But to insure the best results, it is essential that the cornstarch be of the best possible quality.

Those having the most satisfactory results with cornstarch recipes always depend upon the old reliable Kingsford's brand—which can be obtained at all modern grocers. When ordering Kingsford's Cornstarch, ask your grocer for a copy of the little Kingsford's Cook Book, which contains the recipes for warm weather dishes referred to above, as well as much valuable culinary information.

The Great Ant Killer

A Simple Method of Dealing with This Pest

All sorts of remedies have been tried by housewives in the effort to exterminate the pesky little ant—an insect which has always been one of the most aggravating pests with which the good housewife has had to contend.

Invariably, however, these efforts have been without success, until the discovery of a paste by a baker in Los Angeles which showed women the way to rid themselves of this annoyance forever.

This paste seems to have uncanny powers over ants. It not only drives them out of a house or store, but keeps them out thereafter. Originally prepared for the use of the inventor in his own shop, its fame soon spread with such rapidity as to cause its being placed upon the market for general use.

This little remedy is known as Kellogg's Ant Paste, and can be obtained at all modern druggists or grocers. Try a package today—and watch your ants disappear forever.

MAKE MONEY OUT OF JIMSON WEED LEAVES

It is amusing to note that the leaves of Jimson Weed, owing to the European war, now command a value. Any school boy in California can make \$2.00 to \$3.00 a day picking the green leaves. The Haas Seed Co., No. 1800 Lincoln Avenue, are paying 1½ cents a pound for the fresh green leaves. All you have to do is ship them in a clean grain sack to the concern and get your money by return mail. They pay the freight. Any quantity shipped providing it is not less than 25 pounds will be received by them and paid for. Now is the time to pick them when they are in blossom.

Write for instructions how to pick and ship them to the Haas Seed Co., 1800 Lincoln Ave., Pasadena, Cal.—Adv.

Flyless Homes

Make yourself not-in-the-way inexpensive no baiting mosquito and fly trap from plans sent on receipt of 50 cents. Eliminates in-the-way traps, sticky and poison papers. Greatest catcher of flies and mosquitoes ever invented. Satisfaction guaranteed. Why not be our agent in your neighborhood. Send 50 cents now for full details to FLYTRAP CO., Longbeach, Cal. Reference: Any Bank in Longbeach.

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211 West First Street Los Angeles

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The Household Department



THE PERFECT DAY

When you come to the end of a perfect day,
And you sit alone with your thoughts
When the chimes ring out with a carol gay,
For the joy that the day has brought,
Do you think what the end of a perfect day
Can mean to a tired heart,
When the sun goes down with a flaming ray
And the dear friends have to part?

Well, this is the end of a perfect day
Near the end of a journey, too;
But it leaves a thought that is big and strong,
With a wish that is kind and true.
For mem'ry has painted this perfect day
With colors that never fade,
And we find at the end of a perfect day
The soul of a friend we've made.
—Carrie Jacobs Bond.

A BARBECUE PICNIC

While we were living near a canyon we very often entertained friends informally with barbecue dinners in the canyon. They were enjoyed by all, and they were a complete change to nearly all, also it is an easy way to entertain as there is practically no work in preparing the dinner.

We had the butcher cut steak an inch or more thick and into individual helpings. Each one took a piece of meat, which was fastened on a green stick three or four feet long with sharpened forked prongs at the end. By sticking the prongs through the meat it was held firm so it could not drop off. Each roasted his own meat by holding it over a bed of coals. When the meat was roasted slices of fresh bread spread thickly with butter were passed. (The bread and butter must be very fresh.) Fresh fruit or strawberries and cream and coffee finished the meal. Sometimes we roasted potatoes in the ashes too. Not many dishes are needed as everyone invariably barbecued the second piece of meat for



OUR business in life is not to get ahead of other people, but to get ahead of ourselves. To break our own record, to outstrip our yesterdays by todays, to bear our trials more beautifully than ever we dreamed we could, to whip the tempter inside and out as we never whipped him before, to give as we never have given, to do our work with more force and a finer finish than ever; this is the true idea: to get ahead of ourselves. Whether we win or not, we are playing better than we ever did before, and that's the point after all—to play a better game of life.—Maltbie D. Babcock.

AUGUST PRIZE CONTEST

For the August prize contest let us have new ways of cooking vegetables. In these summer days we want all the green vegetables we can have, but we do get tired of the old ways of serving them.

Summer squash, for instance. Now we always did like the first taste of boiled summer squash, but that was all; the first taste was enough. Recently I tried boiling the squashes whole until tender, then scooping out the top of the center with teaspoon and mashing with the part taken out rich grated cheese, salt, pepper and a little butter. When these are slipped back in the oven and browned they are delicious—to our taste—and no more summer squash spoils on our hands.

Have you tried new ways of preparing spinach, turnips, egg plant, etc. If you have pass them on to your Cultivator friends.

Cash Prizes

For best recipe \$2.00 in cash will be paid; for second best, \$1.00.

Write Early

Recipes will be published in the Cultivator of August 19. All should be in this office by the morning of August 12. Many valuable articles were received two weeks after the close of the July contest, so could not be used. Kindly note the closing date.

Please write on one side of paper only and send one recipe. Address to Household Department, California Cultivator, Los Angeles.

All whose recipes are published will receive a three months' extension of subscription. With your recipe send name of member of your family now receiving the paper that his name may be credited with the extension.

If you have received one extension of subscription this year you are not entitled to another, but all may compete for the cash prizes.

Send Suggestions

We will be glad to receive suggestions for future contests.

PRIZE WINNERS

The first prize for July contest goes to Mrs. E. D. Curl, Earlimart; the second to Mrs. Floy Crosby Smith, Fair Oaks.

the fun of doing it. Sometimes we toasted marshmallows while sitting around the campfire after dinner.

These barbecues are especially enjoyable held in the spring time and at dusk. In case one does not live near a canyon or a wild spot one could have a barbecue out in the yard under some trees.

Here is a salad dressing that is good for sandwiches, to mix with the yolks of hard boiled eggs for deviled eggs or for potato or other salads for a picnic lunch. It is easily made and keeps indefinitely if sealed.

Yolks of six or more eggs beaten very light and mixed with half cup of sugar, one-third cup butter, one teaspoon salt, half teaspoon pepper, one teaspoon celery seed, one teaspoon mustard. Add to one cup of hot vinegar and boil, stirring constantly until thick. Thin with cream.—Mrs. E. D. Curl, Earlimart.

PICNIC LUNCHESES

A picnic dinner, like any other meal, may be as simple or as elaborate as one chooses.

My experience has been with the family when they go for a day's outing, a lunch that will satisfy the appetites of the children and require but little time and labor for preparing, such as the following: Round sandwiches, fried chicken, beets and hard boiled eggs pickled together, olives, individual pies, gingerbread, ripe apricots.

These things, with the exception of the sandwiches, can be prepared the day before and require but a few moments for packing.

The bread for sandwiches is baked in old baking-powder cans, sliced very thin and spread with butter. Anything else desired may be used as filling; peanut butter, chopped raisins and nuts, pimento with cheese, lettuce, etc.

The individual pies are constructed after the usual method except that they are baked in muffin tins, and being small they can be packed away easier and are not so prone to break and lavish their juices upon everything else.

Any fresh fruit in season goes well for dessert, even the plebeian watermelon if thoroughly cooled and kept so by a wrapping of wet barley sacks.

I find for carrying lunches nothing

quite so satisfactory as a square tin cracker box. Its shape admits of close packing so the food does not shift and

Improved Preserving Methods

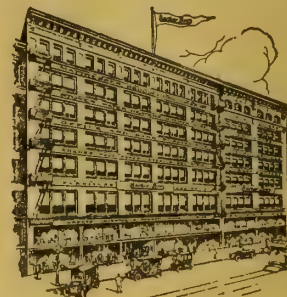
A Discovery of Great Interest to All Who Do Preserving

It has been conclusively shown through experiments conducted by both American and English manufacturers of high grade preserves, jams and jellies that the best results can be obtained in preserving if part corn syrup is substituted for all sugar. The natural flavor of the fruit is much more apparent, and a heavy syrup is obtained without the cloying sweetness of the all-sugar syrup.

This is particularly true in canning pears and other fruits having a delicate flavor. Most housewives desire a thick, heavy syrup; and in order to obtain this so much sugar is used that the canned or preserved pears have a cloying sweetness. This is also true of peaches, raspberries and many of the other more delicately flavored fruits.

The most satisfactory method is to add a good corn syrup to the sugar. For this purpose the best domestic science schools recommend the use of the brand of syrup known as Karo (Crystal White) and train their students in the proper blending of this syrup with sugar.

If you have never tried this ideal preserving syrup, order some Karo (Crystal White) from your grocer today, and ask for the little Karo book on preserving.



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As an eye remedy or an eye bath, Dr. Thompson's Eye Water has stood unequalled since 1795—one hundred and twenty years. Your mother and your grandmothers esteemed it as an indispensable household need. Do you? If not, you do not know the benefits your eyes would secure by using it regularly. Keep your eyes strong and healthy and they will help keep you. 25c at your druggist, or John L. Thompson, Sons & Co., 159 River-st., Troy, N. Y. Booklet free.

crush, and its tight cover keeps out the dust and prevents the lunch from becoming dry.

A large roll of waxed paper costs only five cents, so one can use it freely in packing, wrapping each article by itself.

Any small pasteboard box lined with the paper will hold pickles, salads or anything that is likely to communicate its flavor or juice to its neighbors.

If a bucket and drinking cups are to be taken along for water, it is well to put lemons and sugar in the lunch box, and it will take only a few minutes to serve lemonade.

The lunch, as it is here outlined, requires no dishes or spoons and so does away with the tiresome task of cleaning or packing away dirty dishes, and the paper napkins used do not suggest extra ironing on a hot day.

If your outing is to be a fishing excursion, you will of course take with you a frying pan, a sharp knife and a piece of bacon—and don't forget the matches.

Even if your picnic dinner is very plain and differs but little from everyday fare, the novelty of eating in the open and with different surroundings will give you a hearty appetite for any wholesome food.

Coffee Gingerbread—Beat well together two cups of sugar, one-third cup of butter and one egg. Add one-half cup each of molasses and strong coffee, a teaspoon each of ginger, cinnamon, and one-half teaspoon cloves, two cups of flour well sifted, with a teaspoon of soda and one-half teaspoon of salt.—Mrs. Floy Crosby Smith, Fair Oaks.

A PICNIC PARTY

"What's more fun than a picnic party, Vittles all on the ground,

Bugs in the butter, ants in the milk,

And 'skeeters a-buzzin' around?"

'Tis a good thing to acquire the picnic habit. A little money invested in some of the equipment, which makes the picnic meal still more attractive and easy to serve, benefits alike the weary mother, the tired business man and the fretful children.

Any receptacle will carry "good eats" from a 15-cent market basket to the fine leather hamper, costing many dollars. Paper napkins, plates, bowls, etc., are nice, but linen and even cheap muslin are best in the end.

White enameled ware is good economy.

Aluminum "flat silver" is so clean; it is not expensive, and very light to carry. Thermos bottles carry drinks best of all. Paraffine paper is a necessary article for wrapping sandwiches, etc., putting over the top of salad dish, butter, etc. It is a good plan to keep a can of the new fluid, solidified alcohol where you can get it when getting camping things ready. It will boil coffee, eggs, etc. Putting lid on can stops fire. In some places it is safer than a camp fire.

Suggestion for Menu—Whole wheat bread sliced and well wrapped. Good fresh butter, peanut butter, sliced cold pot roast, or other meat. Cake, crackers (in box), pickles, jelly, etc. Instant coffee, instant postum, egg lemonade.

Egg Lemonade—One large lemon, two eggs, absolutely fresh. Sugar to taste. Fresh cold water. Break eggs, separating whites from yolks. Beat white very stiff, beat yolks, to which add sugar, stir well. Add juice of lemon (strain out seed), now beat well again. Add whites and mix thoroughly. Pour into two glasses, fill with cold water and drink before the whites have time to rise.—Allan Corwin, Mesa.

AN EVENING PICNIC

We were all members of farmers' families and had worked hard all day in mid-summer. The thought occurred to us why not go to the nearby river for our evening meal. At 4 o'clock we were off, and in a little while had selected a beautiful shady spot on the grass in which to eat the contents of our well-filled baskets. One man had a boat and some went for a row, some to fish and swim. All promised to be back in an hour. At the appointed time they came and a fine mess of fish was prepared and fried on the fire the boys had made.

Coffee was also on the fire. A cloth was spread and the good things enjoyed to the utmost, for there

was no hot stove or kitchen and no dishes to wash. This especially appealed to the ladies. The hired men went too.

After supper we sat by the fire and told stories and sang the good old songs, and all voted it a jolly good time.

This was what we had in the basket: Chicken sandwiches, pimento sandwiches, egg and potato salad, chocolate cake, cookies, bread and butter, fried fish and hot coffee.

This is how we made the pimento sandwiches: Drain and mash fine one can of pimentos with a generous slice of grated cheese. Mix all together with mayonnaise dressing and put between thin slices of buttered bread.—Mrs. N. H. McAuslan, Princeton.

AN IDEAL MEAL IN CAMP

Instead of packing the picnic or camp basket with hard boiled eggs, sandwiches, cake and pickles, try this combination: One frying pan, one large pot, one coffee pot, a piece of lean bacon, flour, baking powder, butter in a tight jar, corn meal, sugar, salt and pepper, with a box of matches. This is the ideal picnic or camp dinner cooked over a bed of coals.

If you can get fresh fish wrap them in grape or sour dock leaves or in a corn husk, plaster them thickly with mud and push them away down beneath the fire, into a bed of hot ashes. Keep the fire going over them for an hour then pull out the lumps of dried mud and carefully break them apart and you will find a perfectly baked fish inside, which needs only butter, pepper and salt. Eggs are delicious cooked that way so also are potatoes. Pot pie, campfire biscuits are fine and can be baked in a kettle. Buy the necessary articles from the nearest farmer, such as milk, corn, chicken and other vegetables.—Mrs. Jenny Cummings, Turley, Okla.

FOR THE PICNIC

Picnics with us are numerous, and lunches have been varied. From the different menus I have selected the following toothsome things which are our favorites:

Bread and butter sandwiches, lettuce sandwiches in oiled paper, potato chips, olives, deviled eggs, bacon, beet salad, jelly, fruit salad made with gelatine, cake, coffee, lemonade.

Nothing is more appealing to the appetite out of doors than a generous supply of bacon, fried over the camp fire.

Here is a recipe for delicious potato chips which all pronounce "the best they ever ate."

Select large smooth potatoes and shave lengthwise, very thin, with a kraut cutter. Fry in hot fat a few at a time till light brown, drain on brown paper and salt.—Blanche Tiede, Santa Ana.

A GOOD LUNCH

I would suggest the following list for picnic: Cheese and pimento sandwiches, ripe olives, pickles, shrimp salad, potato cake, maple nut ice cream.

For one gallon maple nut ice cream: Two quarts fresh milk, two teacups sugar, one envelop Knox Gelatine, one quart cream, one jack frost tablet, four eggs, one 5-cent can condensed milk, one-fourth teaspoon mapleine, one teacup chopped walnut meats. Heat milk and gelatine. Do not boil, simply dissolve gelatine; strain through cheese cloth. Add cream, add jack frost tablet, which has been dissolved in one tablespoon water.

Let above ingredients set until they jelly, perhaps 15 or 20 minutes, then add four eggs well beaten, condensed milk, flavoring and nuts chopped. Turn into freezer, which has been packed, freeze and let ripen for two hours.—Isabel Delmers, Exeter.

GOOD THINGS FOR OUTING LUNCH

Ham and egg sandwiches, not baked beans, sweet pickles, olives, raisin bread and butter, marmalade, cake with ground nut frosting, cheese, hot coffee, lemonade, home-made fudge.

The beans and coffee may be kept hot if well wrapped in paper before leaving home.

Ham and egg sandwiches: Fifteen

(Continued on Page 95)



Gas Stove Convenience with Kerosene

Hot in Your Kitchen?

No need of it if you cook with a good oil stove. The heat is concentrated on the cooking—not radiated throughout the room.

New Perfection Oil Cook-Stove

For Best Results Use Pearl Oil

Abundant heat—always ready at the touch of a match—like gas. Can be turned out the minute you finish cooking. Cooks anything your wood or coal range does—and there's no heavy hods to lug—no dirt or ashes. No odor. Does not taint the food. Ask your dealer. See Exhibit, Palace of Manufactures, Panama-Pacific Exposition.

STANDARD OIL COMPANY

(California)
Los Angeles



The Modern Idea

Get in touch with the world. Farm telephones help business, help farm life—save time and money. A few men in your neighborhood can get together and easily build a local telephone farm line.

The line is simple, easy to build
The telephone is easy to install
The cost is not excessive
The upkeep is small

Especially are these things true, when reliable, made-to-last telephones are used. Each man can buy his own telephone, then decide upon the cost of wire, poles and supplies. We will tell you the approximate cost, what material is needed and show you how to put up the line free.

Co-operative farm lines are not a new idea. They are being operated in many parts of the world now. Very many thousands of Kellogg telephones are installed today—many in service for eight or ten years in all parts of the United States.

Kellogg Telephones

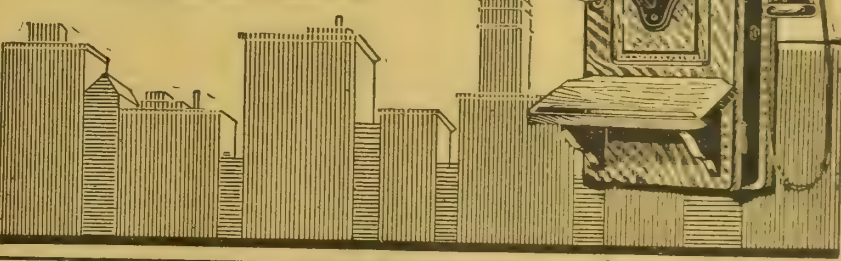
Kellogg farm telephones save you money because they are practical and well built, do not get out of order easily, give unexcelled transmission which means that the bells ring properly, that you can hear and be heard clearly and distinctly.

Ask our practical telephone men at San Francisco for our illustrated bulletins that tell in a plain, understandable way how our telephones operate and why they save money.

We will send you these bulletins and help you build your line in any way that we can. Tell us what you want and the conditions under which you will build your line. Write for bulletin 24.

Kellogg Switchboard and Supply Co.

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San Francisco, California



CENTRIFUGAL PUMPS

SPRAY RIGS

DEEP WELL PUMP

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We don't ask you to see us first, but last. We have satisfied customers in your own neighborhood—that's why our products stand investigation.

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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, July 21, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras 26
Firsts 24 1/2
Country 22 @ 23
Ladle 20 @ 21

CHEESE

Prices to trade, 1 to 2 cents higher:
California Fresh 13
Cheddar 20 @ 21
Domestic Swiss 20
Eastern Daisy 19
Oregon Triplets 15 1/2 @ 16
Eastern Twins 16 1/2 @ 17
Longhorn 19 @ 19 1/2
Imported Swiss 33 @ 35
Tillamook 16 1/2 @ 17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts 26
Candled 28
Petaluma—Santa Rosa 28
Northern Case Counts 25
Northern Fresh Extras 25 1/2
Other Outside Stock 25

Prices to producers:

Hens, lb. 11 @ 17
Roosters, old 9
Broilers, lb. 17
Fryers 17
Roasters, lb. 17
Turkeys 14 @ 16
Ducks 12
Geese 11
Squabs, doz. 1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt. 7.75
Prime Steers 7 1/4 @ 7 1/2
Helfers 6 1/4 @ 6 1/2
Calves, lb. 3 1/2 @ 9
Sheep—
Ewes, head 4.50
Wethers 5.00
Lambs, head 4.75 @ 5.00

POTATOES

Wholesale selling prices:
Idaho Russet 2.40
Idaho Rurals 1.60
Sweets, lug 1.50
Northern Burbanks 1.20 @ 1.25

ONIONS

Wholesale selling price:
Bermudas, Imperial Val., cr. 75
Boiling Onions, crate 1.35
Crystal Wax, crate 90 @ 95
Local Silverskins, cwt. 90 @ 1.00
Garlic 10 @ 11

VEGETABLES

Wholesale selling price:
Asparagus, green, lb. 10
Artichokes, Northern, doz. 1.00 @ 1.10
Beets, doz. 30
Beans—
Wax 5
Limas 7 @ 8
Green 4 @ 4 1/2
Cabbage, sack 80
Carrots, doz. 30
Cauliflower, doz. 1.50
Celery, doz. 40 @ 75
Chicory 40
Chives, doz. 1.25
Corn, lug 1.40
Sack 35 @ 40
Cucumbers, lug 35 @ 40
Egg Plant, lb. 5 @ 6
Escarole, doz. 10
Horseradish, lb. 10
Leeks, doz. 40
Lettuce, doz. 25
Mint, doz. 40
Okra, lb. 10
Onions, Green, bunch 20
Oyster Plant, doz. 40
Parsnips, doz. 40
Parsley, doz. 15
Peas, Telephone 6 @ 6 1/2
Peppers—
Chili, Green 6 1/2 @ 7
Bells 7 @ 8
Radishes, doz. 15
Rhubarb—
Crimson Winter, box 75
Strawberry 90 @ 1.00
Spinach, doz. 15
Squash—
Crookneck, box 40
Summer, lug 30 @ 35
Tomatoes—
Crate 85
Lug 90
Turnips 30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders 1.50
White Astrachan, box 1.50
Gravensteins 1.90 @ 2.00
Crabapples, lug 90
Apricots, lug 50 @ 60
Avocados, doz. 4.50
Bananas 4 @ 4 1/2
Berries—
Strawberries, tray 75 @ 1.00
Blackberries, tray 75
Raspberries, tray 80
Loganberries, tray 50
Cantaloupes—
Diamond Pack 1.35 @ 1.40
Pony 1.00

Standard 1.25
Jumbos 1.35
Casabas, half crate 2.90
Cherimoyas, lb. 20 @ 25
Currants, crate 90 @ 1.00

Figs—
Calimyrna, box 1.25
Black, box 50 @ 65
White, box 60 @ 1.15
Grapes, lb. 7 @ 8
Seedless, crate 1.50
Nectarines, lug 1.25
Peaches—
Clings, box 65 @ 70
Freestones, lug 70
George IV, lug 1.15
Pears, Bartlett 1.75
Plums—
Climax, lug 1.00
Damson 1.00
Formosa, lug 1.25
Satsuma, lug 65 @ 90
Burbank, lug 75
Green Gage 1.25
Tragedy 1.35 @ 1.40
Wickson 1.00
Pineapples, lb. 5 @ 6
Watermelons, lb. 1 @ 1 1/2

CITRUS FRUIT

Wholesale selling price:
Lemons 1.50 @ 2.25
Grapefruit, Seedless 2.25 @ 2.75
Limes, basket 85
Valencias 2.75
Sunkist 3.50

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes, 7 1/2 @ 8 1/2
Apricots 8 @ 16
Nectarines 12 1/2
Peaches 5 @ 7
Pears, lb. 11 @ 12 1/2
Prunes 8 @ 17 1/2

NUTS

Prices named by California Walnut Growers' Association are:
No. 1 16 1/2
Budded Walnuts 20
Jumbos 19
No. 2 12
Culls 9
Peanuts—
California, Raw 6
Japan 5 1/2
Eastern 7 1/2
Rice Corn 5.00 @ 5.25

HONEY

Wholesale selling price:
Comb, Fancy, Water White 16
White 15
Light Amber 12 1/2
Extracted Water White 6 1/2 @ 7
White 5 1/2
Light Amber 4
Beeswax 25

RICE

Wholesale selling price:
California 4.25 @ 4.75
Broken 2.75 @ 4.25

BEANS

Wholesale selling price:
Producer's price not far from one dollar under these quotations:
Limas 5.00
Bayous 6.00 @ 7.00
Lady Washington 5.50
Pinks 4.50
Black Eyes 6.75 @ 7.00
Lentils 14.00
Small White 5.25
Garbanzos 8.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley Hay 8.00 @ 10.00
Wheat Hay 8.00 @ 10.00
Tame Oat 9.00 @ 12.00
Alfalfa 8.00 @ 11.00
Volunteer 5.00 @ 7.00
Straw 4.00 @ 5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow 2.15
Corn, White 2.25
Wheat 2.05 @ 2.10
Oats, White 1.90
Oats, Hulled 2.25
Egyptian Corn 2.20
Barley Seed 1.50
Barley, Hulled 1.85
Kafir 2.05

WEATHER CONDITIONS

For Week Ending July 17, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Stations	Past Week	Seasonal to Date*	Normal to Date*
Eureka	.00	.20	.11
Red Bluff	.00	.00	.00
Sacramento	.00	.00	.00
San Francisco	.00	.01	.01
San Jose	.00	.00	.00
Fresno	.00	.00	.00
Independence	.00	.00	.00
San Luis Obispo	.00	.01	.01
Los Angeles	.00	.00	.00
San Diego	.00	.00	.00

Temperature Data

—Past Week—	Maxi-	Mini-
mum	mum	
64	48	
98	64	
96	56	
78	52	
90	52	
100	60	
96	..	
82	50	
84	58	
78	62	

Milo 1.85
Sunflower Seed 7.00 @ 7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Bran, Heavy 1.90
Alfalfa Meal 1.15
Alfalfa Molasses, per cwt. 1.20
Beef Scraps 3.00 @ 3.10
Beet Pulp 1.20
Cracked Corn, cwt. 2.20
Cracked Wheat, cwt. 2.20
Cotton Seed Meal 1.80
Bone, Green 1.75 @ 1.85
Meat Meal 3.00 @ 3.10
Bone, Green 1.65 @ 1.75
Charcoal 1.90 @ 2.00
Oil Cake Meal 2.60
Fish Meal 3.15 @ 3.25
Rolled Barley 1.45
Middlings 2.20
Rolled Barley 1.30
Feed Meal 2.25
Scratch Feed 2.10 @ 2.40
Oyster Shell 1.15 @ 1.25

San Francisco Market

SAN FRANCISCO, July 20, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Extras 27
Firsts 25 1/2

CHEESE

Wholesaler to retailer.
Oregon, Y. Am. 14 1/2
Young America 11 1/2 @ 12 1/2
California Flats 8 @ 12
Cheddar 20
Oregon Twins 13 1/2

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Extras 25
Firsts 21 1/2
Select Pullets 23 1/2

Price to producer:

Hens, lb. 13 @ 16
Fryers 20 @ 22
Broilers 19 @ 20
Roosters—
Young 25 @ 26
Old 9 @ 10
Squabs 1.75 @ 2.25
Ducks 1.12 @ 16
Geese 2.50 @ 3.00
Belgian Hares, lb. 6 @ 7

LIVE STOCK

San Francisco prices, gross weight:
Steers 4 @ 6 1/2
Cows and Heifers 3 @ 5 1/2
Calves, lb., live weight 6 @ 9 1/2
Hogs 4 1/4 @ 7 1/2
Wethers 6 @ 6 1/2
Ewes 5 1/2 @ 6
Milk Lambs, lb. 7 1/4 @ 8 1/2
Shorn stock, 3/4 @ 1c less
Wholesale selling price:
Idaho 1.50 @ 1.75
Idaho Russet 1.50 @ 1.75
Burbanks, cwt. 1.00 @ 1.25
Oregon 2.00 @ 2.25
Delta 65 @ 90

ONIONS

Wholesale selling price:
Onions, cwt 40 @ 65
Bermudas 1.00 @ 1.15
Australian Browns 75 @ 1.00
White, crate 65 @ 85
Oregon, cwt. 90 @ 1.00
Garlic, new 4 @ 6

VEGETABLES

Wholesale selling price:
Asparagus, box 1.25 @ 1.75
Beans—
String, lb. 1 1/2 @ 3
Limas, lb. 5 @ 7
Wax, lb. 1 1/2 @ 2
Corn, sack 75 @ 1.25
Brentwood and Bay 1.25 @ 1.50

Cucumbers 75 @ 1.25
Eggplant, lug 75 @ 1.15
Lettuce, crate 50 @ 1.00
Okra, lug 1.00 @ 1.75
Peas, sack 1.25 @ 2.00
Peppers—
Bell, lug 1.00 @ 1.25
Chili, Mexican, lug 75 @ 1.00
Rhubarb 75 @ 1.00
Squash, Summer, lug 40 @ 60
Cream 1.00 @ 1.15
Tomatoes—
Southern, lug 75 @ 1.00
Merced, crate 20 @ 35

FRESH FRUIT

Wholesale selling price:
Apples—
Alexander 75 @ 1.25
Red Astrachan 90 @ 1.00
White Astrachan 1.00 @ 1.25
Gravenstein 1.00 @ 1.25
Apricots, lug 40 @ 75
Canner's price, ton 17.50 @ 22.50
Bananas, Hawaiian, bunch 1.25 @ 1.50
Blackberries, chest 2.50 @ 3.50
Cantaloupes—
Ponies, Turlock 1.00 @ 1.25
Standard, Southern 1.00 @ 1.50
Standard, Turlock 1.50 @ 1.75
Jumbo, Southern 1.50 @ 1.75
Cherries—
Blacks, lb. 4 @ 8
Royal Ann 5 @ 7
Ordinary 2 @ 4
Currants, chest 5.50 @ 6.00
Figs, box, single layer 50 @ 65
Double layer 1.50 @ 2.00
Grapes, crate 1.25 @ 1.75
Thompson Seedless 1.25 @ 1.75
Malagas 1.50 @ 1.75
Gooseberries, lb. 8 @ 10
Loganberries, chest 2.00 @ 5.00
Peaches, crate 50 @ 60
Pears, Bartlett, box 1.25 @ 1.50
Other Varieties 75 @ 1.25
Canner's, ton 19.00 @ 26.00
Pineapples, doz. 2.00 @ 2.50
Plums—
Clyman 50 @ 75
Satsuma 55 @ 75
Tragedy 50 @ 75
Raspberries, chest 6.00 @ 9.00
Strawberries, chest 5.00 @ 7.00
Watermelons, lb. 1 1/2 @ 1 1/4

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless, new crop 2.00 @ 3.00
Lemons 1.50 @ 3.50
Lemonettes 1.00 @ 1.75
Limes, Mexican, case 4.00 @ 5.00
Tangerines, halves 75 @ 1.75
Valencias 2.75 @ 3.50

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3 1/4 c. All outside sections 1/4 c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Choice Fancy
Apricots 5 1/4 c 6 1/4 c 7 1/4 c 7 1/2 c
Peaches 3 1/4 c 3 1/4 c 4 c 4 1/2 c
Pears 7 c 8 c 9 c 10 c

RAISINS

The following prices are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6 1/2 c; do, 12-oz., 5 1/2 c; bulk, 6c; choice seeded, 16-oz., 6 1/4 c; 12-oz., 5c; bulk, 5 1/2 c; Thompson seedless, No. 1, 16-oz., 7c; 12-oz., 6c; 50-lb. cs., 6 1/2 c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5 1/2 c; 3-crown, 5 1/2 c; 4-crown, 5 1/2 c; London layers, 1-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:
Nonpareil 16 1/2
I. X. L. 14
Ne Plus 13
Drakes 11 1/2
Peanuts—
Unpolished 3 1/2 @ 4 1/2
Polished 4 @ 5 1/2
Shelled, China 5 1/2 @ 6
Italian Chestnuts 6 1/2 @ 7

BEANS

Wholesale selling price:
Limas 4.40 @ 4.50
Pink 3.50 @ 3.60
Black Eyes 5.85 @ 6.00
Cranberry 4.25 @ 4.50
Small White 4.40 @ 4.55
Garbanzos 6.50 @ 6.75
Large White 4.40 @ 4.55
Bayou 4.25 @ 4.50
Manchurian Speckled Bayous 3.60 @ 3.80
Manchurian Butters 4.50 @ 4.75
Red Mexican 5.40 @ 5.50
Red Kidney 5.90 @ 6.00
Horse Beans 3.00 @ 3.50

HONEY

Wholesale selling price:
Comb, Water White 14 @ 16
Light Amber 11 @ 12
Amber 10
Extracted White 6 1/2 @ 7 1/2
Light Amber 3 1/2 @ 4 1/2
Dark Amber 2
Beeswax 25 @ 28

HOPS

Wholesale selling price:
Sacramento Valley 8 @ 10

Sonoma-Mendocino11 1/4@13
Oregon Clusters11 1/4@13

HAY

Under date of July 17, Scott, Magner & Miller say:

Arrivals of hay during the past six days have amounted to 4200 tons, which is an increase of over 1000 tons over last week's arrivals. Active loading by rail is steadily continuing and more of the new crop will be coming forward as the season advances. The main part of present arrivals has consisted of old crop. Harvesting is in active progress. Some new hay appears to be changing hands in the country although very little has yet been moved into our markets. The prices being realized appear to satisfy expectations of the farmers as they are much better than last season. This applies to good grades of hay. Alfalfa has continued to arrive in moderate quantities. At this time there is no particular demand.

Fancy Wheat Hay (11 bales)13.00@14.00
No. 1 Wheat or Wheat and Oat10.50@12.00
No. 2 Wheat or Wheat and Oat8.00@9.00
Choice Tame Oat11.00@11.50
Other Tame Oat7.50@10.00
Barley8.00@10.00
Wild Oat6.00@8.00
Alfalfa7.00@10.00
Stock Hay5.00@5.50
Straw40@45

GRAIN

Alfalfa Seed16 1/4
Wheat, Cal. Club17 1/4@1.75
Barley Feed1.15@1.17 1/2
Barley, Old Crop Feed1.02 1/2@1.05
Corn, Eastern Yellow1.79@1.80
Corn, Egyptian White1.85@1.90
Oats, Red, Feed1.25@1.32 1/2
Oats, White, Feed1.47 1/2@1.50
Millet2 1/2@3 1/4
Flaxseed5@5 1/2
Rye2.00@2.25
Sunflower5@5 1/2

FEED STUFF

Wholesale prices:

Alfalfa Meal, car lots13.50@14.50
Bran, ton23.00@29.50
Feed Cornmeal41.00@42.00
Cracked Corn41.00@42.00
Rolled Barley, ton25@26.00
Rolled Oats, ton37.00@37.50
Middlings32.00@34.00
Shorts29.50@30.50
Oilcake Meal38.00@39.50
Cocoanut Oilcake Meal24.00@25.00

Citrus Fruit Market

LOS ANGELES, July 21, 1915.

The orange market has fully maintained its former strong condition and is at this time giving to the growers good returns. At present rate of shipping the entire crop will be handled in good condition.

The lemon market is becoming more satisfactory. Weather conditions have changed in the East and the great mass of fruit on sidings and in warehouses is being cleaned up. Shipments are being resumed; at present about 40 cars are going forward daily. An increase of about a dollar per box is observed in prices during the past week, but as former prices were not sufficient to meet the freight, there is still opportunity for improvement.

Shipments

Shipments of oranges to date from Southern California since November 1, 29,804 cars, lemons 5,018, total 34,822. To same date last season: oranges 32,647, lemons 2,326, total 34,973. From Tulare County: oranges 5,648, lemons 202, total 5,850. To same date last season: oranges 5,875, lemons 30, total 5,905. From northern counties: oranges 630, lemons 2. To same date last season: oranges 404, lemons 5.

NEW YORK, July 19.—Seventeen cars Valencia, one navel, four lemons sold. Market steady on Valencias, lemons considerably higher. Fair and warm.

VALENCIAS—

Old Mission, xf., Chapma...n.Avge. \$4.10
Old Mission, fy., Chapman..... 3.80
Golden Eagle, sd., Chapman..... 3.60
Orchard, National O. Co. 3.85
Standard, National O. Co. 3.35
Aurora, Amer. Ft. Dis. 3.85
Tesoro Rancho, Blue. 3.80
Tesoro Rancho, Red. 3.45
Ruby 3.10
Charter Oak, S. D. Ex. 4.25
Iris, M. D. Ex. 4.45
Violet, D. M. Ex. 3.85
Kenilworth, A. H. Ex. 3.80
Peasant, A. H. Ex. 3.50
Carmenita, S. T. Ex. 8.80

NAVELS—

Pepperleaf 1.65
Pepperleaf 1.90
Cherokee 1.45
Oriole 2.05

VALENCIAS—HALVES—

Red Ridinghood\$1.55

GRAPEFRUIT—

Orchard\$1.65

LEMONS—

Santa Gertrude\$2.55
Royal 1.25
O.C. 1.00
Greenleaf 1.90
La Puente 1.50
Questa 1.95

BOSTON, July 19.—Nine cars sold. Market doing better on oranges, higher on lemons.

VALENCIAS—

Athlete, S. A. Ex.Avge. \$3.75
Alhambra, S. T. Ex. 3.65
Whittier, S. T. Ex. 3.55
Pico, S. T. Ex. 3.35
Ranchito, S. T. Ex. 3.55
Glendora Home, A. C. G. Ex. 3.80
Carmenita, S. T. Ex. 3.85
Colombo, S. T. Ex. 3.55
Las Palmas, S. T. Ex. 3.10

LEMONS—

Trail, A. C. G. Ex.\$2.15
EEE Brand, S. T. Ex. 1.80

PITTSBURGH, July 19.—Market strong on oranges; higher on lemons. Seven cars sold.

VALENCIAS—

N. W. B. Selected, V. C. Ex.Avge. \$3.35
Plain Wraps, V. C. Ex. 2.90
Victoria, A. H. Ex. 3.75
Navajo, A. H. Ex. 3.45
Prairie Chicken, A. H. Ex. 3.50
Violet, D. M. Ex. 3.90
Jasmine, D. M. Ex. 3.45

LEMONS—

Blue Scroll, O. K. Ex.\$1.35
Red Scroll, O. K. Ex. 1.20
Diamond, S. O. K. Ex. 1.00
Linwood, C. C. Ex. 1.90
Lemonia 1.90
Questa, Q. C. Ex. 1.35
Questa 2.00

GRAPEFRUIT—

Prairie Chicken\$1.10

CLEVELAND July 19.—Three cars sold. Market steady on oranges, strong on lemons.

VALENCIAS—

Aurora, Amer. Ft. Dis.\$3.70
Sapho, Amer. Ft. Dis. 2.85
Jupiter, Amer. Ft. Dis. 2.35

CINCINNATI, July 19.—Six cars sold. Higher on oranges, very active on lemons.

LEMONS—

Gold Medal, G. O. Groves.Avge. \$2.95
As-you-like-it, L. G. F. G. A. 2.00
Growers 2.00
Commercial, A. H. Ex. 1.70
Cloverdale, L. F. Co. 2.85
Palomar 3.00
Arab, S. D. Ex. 2.95
Pup 2.55

VALENCIAS—

Balboa, S. T. Ex.\$3.70

ST. LOUIS, July 19.—Six cars sold. Unchanged on lemons, weaker on small sizes Valencias.

VALENCIAS—

Aztec, S. W.Avge. \$3.45
Quailty, S. T. Ex. 3.10
Campfire, S. T. Ex. 2.95
Cut and Try, S. T. Ex. 3.30

LEMONS—

Squirrel, A. H. Ex.\$2.45
Prairie Chicken 2.20
Golden Rule, Riv. Ex. 2.40
Golden 2.25
Questa, Q. C. Ex. 1.80
Stock Label, S. W. 2.60

PHILADELPHIA, July 19.—Eight cars sold. Market is firm at prevailing prices on Valencias; strong on lemons.

VALENCIAS—

Golden PlumeAvge. \$3.55
Red Plume 3.20
Troy, Or. Ex. 4.90
Atlas, Or. Ex. 4.05
Hector, Or. Ex. 3.85
Foothill Beauty, Or. Ex. 2.65
Wm. Tell, Or. Ex. 3.70
Golden Beaver, Or. Ex. 3.55
Saddleback, Or. Ex. 3.40
Martha Washington, Or. Ex. 3.55
Cowboy, Or. Ex. 3.25
Searchlight, Or. Ex. 3.45
S. S. Brand, Or. Ex. 3.30

LEMONS—

Log Cabin, L. F. Ex. 2.25
Hillside Gem 1.70
California, Q. C. Ex. 1.95
O I C. 1.45

CHICAGO, July 19.—New varieties of Pacific Slope cherries came on the market today: cases, 24 pints, Black Republican, 1.50@1.75; Royal Ann, 1.50; Oregon "Blings," 3.00@3.25; Lamberts, 3.00@3.25. Pears, 40-pound boxes, Bartlett's, 2.10@2.50. Peaches, 20-lb. boxes, Hale's Early, 35@40; Triumphs, 50@60. Apricots, cases, 4 baskets, 1.00@1.25. Plums, Tragedy, 1.15@1.30; Purple Duane, Simon, Burbank and other Pacific Slope varieties, .85@.90. Oranges, boxes, 3.75@4.25. Lemons, boxes, Californias, 2.50@2.75; Messina, 1.75@2.25. Cantaloupes, standard case, California, 2.00; Arizona, 2.00@2.50; Arkansas, 1.50@1.65. Watermelons, receipts 67 cars; per car 125.00 @175.00.

HONEY CROP

It is probable that the state over we will not produce this year much more than 50 per cent of a full honey crop. At orange blossoming time the heavy rains prevented bees doing full duty to the flow and in some of the sage sections of Europe the foul brood has made such inroads that the amount stored there will be very light.

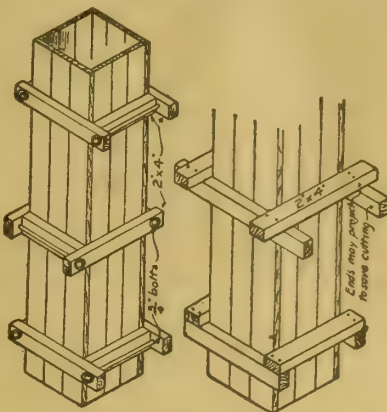
Much time and vexation of spirit can be saved by carefully planning out every task before actually beginning it. To rush thoughtlessly into one's work is evidence of poor management. The most successful men are those who think things out pretty carefully beforehand, anticipate the difficulties and take steps to avoid them if possible.

Plans made some time ahead for buildings and other improvements will be worth much to the manager of the farm. By making plans early time, labor and money may be saved in building and buying needed buildings and other improvements.

CONCRETE ARBOR

(Continued from Page 75)

skill in laying up the boulders. The strength of cement makes up for the crudeness in work. In this case the arms of the "seat" were of large boulders projecting in such a way as to give most comfort. Of course,



while rough boulders answered for sides and back, the seat was made of sand and cement while over the surface before it had set was sprinkled dry cement, which was smoothed down, giving as attractive a surface as though a professional had done the work.

OUTING LUNCH

(Continued from Page 93)

cents' worth of cold-boiled, sliced ham and one or two hard boiled eggs. Boil the eggs 20 minutes that the yolks may be mealy. Put the ham through a meat grinder with a tiny piece of onion and the whites of the eggs. Mash the egg yolks into this, add a little pepper and salt if necessary, moisten with cream. Butter the slices of bread, spread one slice with prepared mustard, then with a layer of the meat mixture and lay on another slice of buttered bread, making a double sandwich and so on.—Mrs. F. A. Marks, Santa Ana.

A PICNIC LUNCH

The very best thing for a picnic lunch is brown bread and beans, for everyone is hungry. Of course, it needs the addition of pickles and fruit, with hot coffee.

To make the brown bread take one cup each of corn meal, graham and rye flour, one cup of syrup, two cups sour milk, one cup of raisins, one teaspoon each of salt and soda. Put in two tomato cans and set in water and boil three hours (cover carefully). When cold slice and butter and arrange sandwiches with pimientos.—C. E. M., Alta Loma.

DO AMERICANS LOVE FLOWERS?

(Continued from Page 80)

ple and the flowers lived together long before the botanist appeared, while here the botanists came with the early settlers to an unexplored field, found the new flowers and named them before the people had become familiarly acquainted with them. The state flower of California has been introduced to the children of that commonwealth as the eschscholtzia before they could spell it, but this does not prove any lack of love or admiration for it on their part. They have a pet name for the flower too; and in all the older settled parts of the country wherever a plant or flower is so abundant or useful or obtrusive that there is need to speak of it a name is found at once. The children of New England call the wild columbines meeting houses, from their shape, no doubt, and with them Viola pedata is the

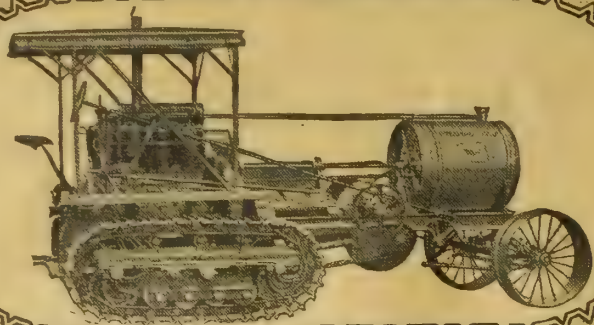
horse violet, perhaps from its long face. The Houstonia, which is bluet in some places, is innocence in others. In northern New Jersey, the marsh marigold of other regions (Caltha palustris) is invariably a cowslip. Children gathering dog-tooth violets by the handful within sight of Trinity church spire, when asked the name of the flowers, expressed much surprise that the inquirer had never heard of yellow bells. Even shortia, which hid away from botanists for a hundred years, had a name which was common enough to answer every purpose, and the man who first discovered it in any quantity was told by the dwellers in the mountain hamlet, where it was spreading over acres, that it was nothing but little colt's-foot. Even where botanical names have not been adopted outright as common ones they have often been changed, just as pyxidanthra has become pyxie to all the dwellers among the New Jersey pines. There are plenty of common names in every locality which have never found their way into the botanies.

American women wear flowers for adornment more generally than the women of any other country. This of itself is proof of the genuineness of their love for flowers. It is absurd to imagine that a custom so universal is based on any sham or passing fashion. The desire for display is prevalent enough, beyond question, but if any one doubts whether the admiration for flowers is an acquired taste—because it is fashionable to wear them—let him carry a handful of them through a city street among groups of children where unsophisticated nature will find expression. The keen delight of these little ones, who will always accept such a gift, shows that the affection for flowers is an original instinct which is as strong in this country as it is anywhere. Fashionable freaks and follies pass away, and flowers would have their brief day like any other craze if the regard for them was artificial or fictitious. The flower dealers of the country need have no apprehension as to the future of their industry. It is based on one of the elementary wants of our nature. Flowers will be loved until the constitution of the human mind is radically changed.

DIFFERENT KINDS OF STEEL

Blister steel is made by causing the carbon of charcoal to penetrate iron in a heated state. German steel is blister steel rolled down into bars. Sheet steel is made by hammering blister steel. Double shear steel is made by cutting up blister steel and putting it together and hammering again. Crucible steel is made by melting in a pot blister steel and wrought iron or unwrought iron and charcoal and scrap. Bessemer steel is made by blowing air through cast iron, burning out the silicon and carbon. Open hearth steel is made by melting pig iron and mixing wrought iron or scrap steel, or iron ore to reduce the silicon and carbon.

One way to select good tool steel is to break a bar of steel and observe the grain, which should be fine and present a silvery look, with sometimes an exfoliated appearance. The best test of steel is to make a cold chisel from the bar to be tested, and when carefully tempered, try it upon wrought iron. The blows given will pretty correctly tell its tenacity and capability of holding temper. If it proves tough and serviceable take this temper as a guide, and temper your steel in like manner. Inferior steel is easily broken, and the fracture presents a dull even appearance.—S. I. Ross, Colorado Agricultural College,



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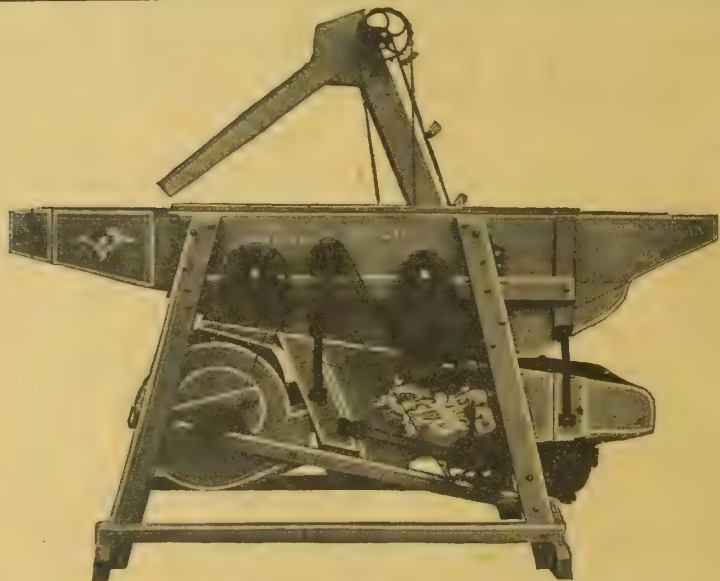
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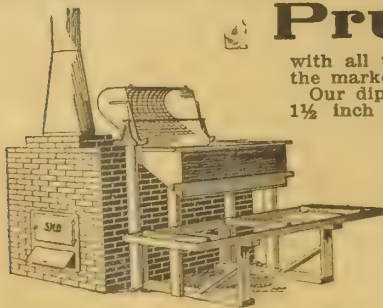
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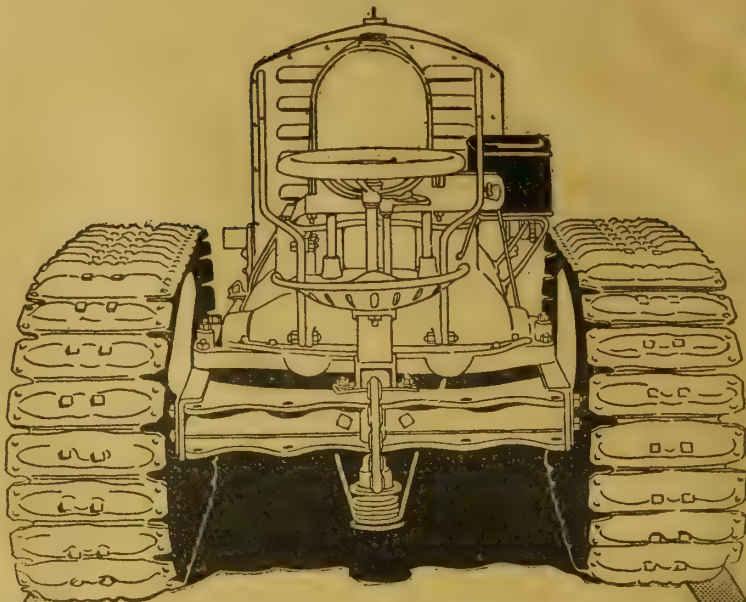
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Only two sets of gears are used for speed—high and low. Gears are shifted by a handle on the transmission case directly in front of the seat.

Each tread is controlled independently. The levers on either side of the steering wheel send the tractor ahead when shoved forward. Pull them to the rear and the tractor is sent backward.

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There is a booklet describing the rest of The Yuba Ball Tread Tractor.

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LOS ANGELES

July 29, 1915

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Eucalyptus Makes a Fine Street Tree



Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
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American Peach Orchard, by Waugh.....	1.00	1.85	2
Arid Agriculture, by Buffum.....	1.50	2.35	3
Book of Alfalfa, by Coburn.....	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey.....	1.50	2.20	3
Cement Worker's Handbook.....	.50	1.30	1
Citrus Fruits, by Coit (new).....	2.00	2.75	4
Cooperation in Agriculture, by Powell.....	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller.....	1.50	2.30	3
Date Growing, by Popenoe.....	2.16	2.85	4
Feeds and Feeding, by Henry.....	2.25	3.00	5
Farm and Garden Rule Book, by Bailey.....	2.17	2.90	4
Farm Animals, Hunt and Burkett.....	1.50	2.35	3
Farm Sewage, by Santee.....	.50	1.40	1
Field Manual for Sugar Beet Growers, Adams.....	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock.....	1.50	2.40	3
Farm Manures, by Thorne.....	1.50	2.25	3
Farm Friends and Farm Foes.....	.90	1.85	2
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Fertilizers, by Vorhees.....	1.25	2.15	3
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Fertilizers, Source, Purchase and Use, by Smith.....	1.00	1.90	2
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Gardening in California, Landscape and Flower by McLaren.....	3.75	4.50	7
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Harpers Gasoline Engine Book.....	1.00	1.80	2
Irrigation and Drainage, by King.....	1.50	2.40	3
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Insecticides, Fungicides and Weed-killers by Bourcart.....	4.50	5.00	9
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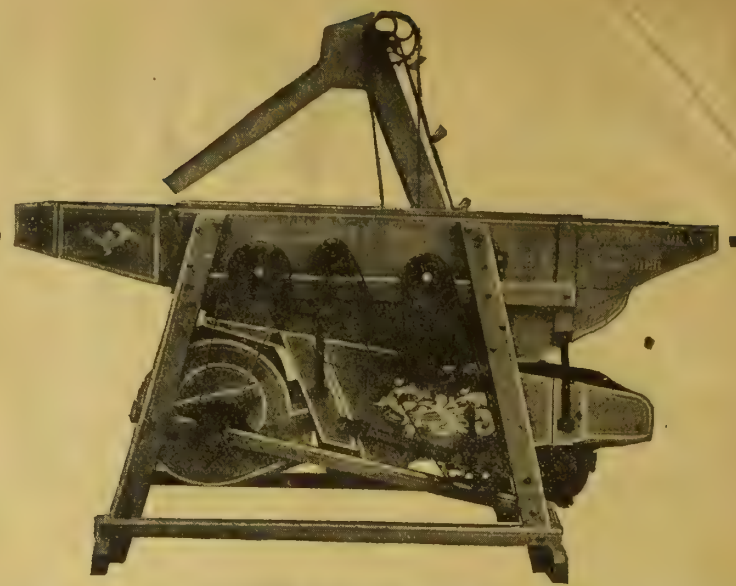
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A B C and X Y Z of Bee Culture.....	2.00	2.85	4
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Vol. XLV No. 5

LOS ANGELES: THURSDAY, JULY 29, 1915

One Dollar Yearly

The 46th State Fruit Growers Convention

California Fruit Growers Assembled in the Buildings of Stanford at Palo Alto
This Week, Dr. Cook Presiding, with Practical California Orchardists
and Experts and Several Noted Eastern Scientists on the Program



THE opening day of these state fruit growers' conventions tends to depress those who are anxious to see large attendance. It now appears that the attendance at the 46th convention will not be as great as that at Los Angeles last November. However, nearly all sections of the state are represented and it is expected that discussions and resolutions of a practical nature will make a most valuable week.

It is yet too early to predict the result of the effort to organize a great state federation of all agricultural interests. There are many who are heartily in favor of it, but it looks as if it would require much push on the part of the larger orchardists to perfect it.

Another week the Cultivator will be able to give more explicit information. As a foretaste we give this week extracts from a few of the addresses.

* * *

EELWORM PARASITES OF PLANTS

By Peter Frandsen, Professor of Biology, University of Nevada

Earth, rich in decaying organic matter, sometimes swarms with microscopic cylindrical worms, which, because of their wriggling movements, are known as eelworms. The most of these feed upon decaying substances and are probably beneficial in hastening the disintegration of animal and vegetable matter so that it may again be available for plant food. Certain forms have acquired the habit of entering the tissues of living plants, where they live as parasites causing more or less injury to their hosts. The parasitic species are distinguished from the non-parasitic by the possession of a minute spear which can be protruded from the mouth opening, enabling the animal to make its way into the roots and through the tissues of the plant.

Among the parasitic forms the one known as *Heterodera radiculicola* is becoming of increasing importance in this western country because of its wide distribution and the number of different kinds of cultivated plants that it attacks. We now have records of some 500 species of plants which are attacked, and these include the majority of truck garden crops, alfalfa, clovers, some grains, a number of fruit trees, ornamental plants, and a host of weeds. The presence of the parasite is indicated by the formation of swellings on the roots and underground stems, which somewhat resemble the root bacteria nodules but are more irregular in shape and size and stand out less sharply from the rest of the root. A heavily infested potato presents a characteristic appearance, one hard to describe but readily recognized with experience. Its surface is marked

by numerous pimples, small warts, creases and ridges. On cutting across the tuber one can see the mature females, somewhat pear-shaped, or circular in cross section, about one-twenty-fifth of an inch in diameter, of a grayish white color, and marked off from the tissues of the potato by a brownish ring. The appearance of a heavily infested potato is not attractive to the housekeeper and diminishes its selling value. There is considerable loss of substance in paring as the worms may penetrate to a depth of a quarter of an inch, and the keeping qualities appear to be lessened.

Each mature female is little more than a sac containing from 300 to 500 eggs which may undergo development inside her body. As the eggs enlarge, some of them are extruded. In from 20 to 28 days the eggs hatch and the minute larvae, one-seventieth of an inch long, emerge and, aided by the decay of the tuber or roots in the soil, eventually make their way into the ground and move about until they find a suitable root which is entered, as a rule, from the tip. We have found that they also enter the young potato tubers by way of the lenticels, or breathing pores. Several worms usually enter the same spot. After repeated moultings the larvae transform into mature males and females. The former are elongated and cylindrical in shape while the latter become pear-shaped. Mating occurs within the plant substance and the male then dies. It requires about a month for the larvae to mature, and the whole life history occupies from seven to eight weeks.

The worms are distributed from one section to another by infected seed potatoes, transplanted seedlings, nursery stock and the like. Irrigation is one of the most important methods of carrying the worm from one field to another and one of the most difficult to control. Farming implements may transfer worms by means of the adhering soil, but our experiments show that if the soil is thoroughly dried out all the worms are killed, so there is probably very little danger from the drifting of soil by the wind. Some experiments were carried on to test the possibility of spreading the parasite by means of the manure of animals fed upon infested plants, and it was found that all eggs and larvae were destroyed in the stomach by the gastric juice.

The eggs and larvae are quite resistant to frost, but freezing temperatures for a sufficient length of time will kill them. The long, cold winters of the northern and eastern states are probably the chief cause of the absence of any eelworm problem outside of the greenhouses. The character and consistency of the soil plays

some part in the degree of resistance to frost. We are now at work to determine the depth to which the worms may penetrate different soils.

It has been suggested that fields might be rid of the worms by flooding them with water, but our experiments indicate that at least three months' submersion would be necessary to make this method effective.

On the other hand we have found a surprising lack of resistance to drying. Eggs and larvae placed on a glass slide and allowed to dry out for a few minutes fail to show any signs of further development, and if infected roots and tubers are allowed to thoroughly dry out all the contained eggs and larvae are killed.

There is also very little resistance to heat. Some eggs and larvae were placed in an incubator at a temperature of 40 degrees Centigrade, with the idea of hastening their development. While development was greatly accelerated in the first few hours to the extent that some of the eggs began hatching before the embryos had reached the proper stage of development, at the end of 18 hours every egg and larva was dead. Infested potato tubers were likewise placed in the incubator at various temperatures for varying periods of time, and it was found that 23 hours was sufficient to destroy the parasites without apparently interfering with the germinating power of the potato. A longer period of exposure than this impaired or destroyed the germinating power. Since it is difficult to be sure of one's seed if it comes from an eelworm locality, because a slight infestation may easily escape even careful inspection, it is possible that such seed may be made innocuous by placing it in an oven for 24 hours at a temperature of 40 degrees Centigrade before planting. We are now testing this out.

A question frequently asked by the farmer is: "Can't we treat the seed and soil with some chemical substance which will rid them of the worms?" Previous investigators have found that liberal treatment of the soil with alkaline fertilizers seems to be unfavorable to the worms but cannot be counted upon to exterminate them. One Nevada rancher claimed that he had a method of applying bluestone, which kept the eelworms from bothering him. We treated worms and infested plants with various strengths of copper sulphate solution and found that even a one per cent solution, which is distinctly poisonous to vegetation, acting for two days directly on the worms, failed to destroy a single egg. The formalin treatment for scab had no appreciable effect on the vitality of the worms in the tubers. We are now carrying on experiments with

other substances but so far have found nothing which appears feasible as an exterminator.

The practical farmer is not so much interested in the scientific details of our studies on the effects of the parasite on its host or the peculiarities of its life history and habits as he is in remedial measures. In the light of our present knowledge, with particular reference to the potato, these may be summarized as follows:

Selection of potato seed from localities known to be free from the parasite.

Planting potato crops in non-infested ground.

Summer fallowing of infested ground, keeping it free from weeds. It is not yet known exactly how long the worms can live in soil kept free from food plants, but the indications are that one season will starve them out.

Deep plowing, preceding a period of hot dry weather, so that the soil is well exposed to the heat of the sun and becomes thoroughly dried out.

Rotation of crops. The following plants are recommended by men in the United States department of agriculture for use in crop rotation as immune or only slightly susceptible to the eelworms: Barley, beggarweed, Brabham cowpea, broom-corn millet, corn, crab-grass, iron cowpea, peanut, pearl millet, redbot, rye, sorghum, timothy, velvet bean, wheat, winter oats. We have succeeded in getting a marked infestation of corn and oats, but even if these crops are not wholly immune they may serve the purpose of greatly reducing the number of worms.

* * *

THE FUTURE OF THE WALNUT INDUSTRY

By J. B. Neff

The early plantings of walnut trees were altogether of seedlings, first hardshells and then softshells, and the orchards were usually left without much care, the owners being content to take whatever crop was produced and market it at the nearest town for any price that was offered. Then came the planting of commercial orchards when more care was given to the selection of land suitable for the growth of the trees.

Selection of trees was not definitely undertaken and seedlings were still planted but of the softshell variety. The methods of marketing were improved to some extent by the organization of associations to prepare the walnuts and collect them into large lots where better prices could be obtained. Grades according to size were established but were not uniform throughout all the associations, as at present, neither was there a uniform method of bleaching as practiced at present.

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Improved methods of managing walnut orchards are gradually coming into use though but little has, comparatively speaking, been done in the scientific selection of varieties best suited to certain localities, or the investigation of diseases with a view to their prevention.

However, the small amount of work which has been done is returning large amounts on the investment and will be an incentive to still further research and experimentation. Planters are now asking for grafted or budded trees of known varieties and marketing methods have taken a long step forward. The University of California has lately undertaken investigations bearing the same relation to the walnut industry that the experiment station work has borne to the citrus industry.

This is promised to be a permanent undertaking and should produce valuable results though investigations of this character are necessarily slow in results since a walnut tree must be under observation for at least 15 years to determine its commercial value.

The industry is however making substantial progress, and the progress will be much more rapid in the succeeding years as the newer varieties become better known and the marketing methods become better developed so as to reach a larger part of those who would be glad to eat California walnuts. When we remember that a crop of California walnuts, amounting to 15,000 tons, which is more than we have produced, will furnish but one-third of a pound, or only about 13 walnuts to each person in the United States, we can readily see there is small likelihood of overproduction if we will use diligence in distribution and care in preparing the walnuts for market.

THE FUTURE OF THE ORANGE, AS I SEE IT

By J. H. Reed

In a recent address President Wilson made this assertion: "No man who does not see visions will ever realize any hopes or undertake any great enterprise."

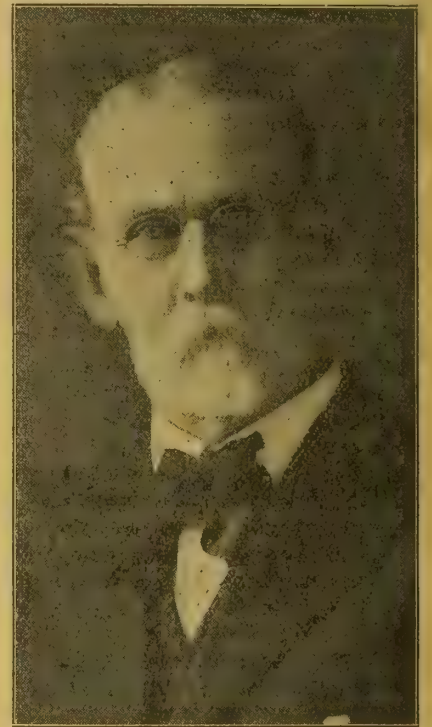
I am neither a prophet nor the son of a prophet, but I have some pronounced visions concerning the future of the orange industry in California. It is said that the best way to preserve one's confidence in progress is to look back, not over a few months but over a period of years. My 25 years as an orange grower, and a somewhat careful student of the industry, possibly give me some advantage in forming opinions as to what may be expected of it in the years to come.

I frankly say that I have optimistic views, and proceed to give reasons for them. It must be understood I do not speak of any given period but of the somewhat indefinite future of a great permanent industry.

At the outset you will allow me to say that I think it generally settled that the future profit of orange growing depends largely on an improved quality of fruit and a lessened cost of production. We must be able to sell an inviting product at a price to encourage such increased consumption as will readily take the greatly increased product now in sight. That briefly is the task set us. In accomplishing it, as I believe we shall, first in my vision I see orange growing becoming more of a profession, that is, a vocation in which a knowledge of science is used. At present a large portion of growers depend on the rule

of thumb. The average orange grower of the future will be as scientific in his profession as the engineer or the manufacturer in his. Again, a few years ago, because of the attractiveness of the business, a large acreage came into the possession of non-residents who managed it by proxy. In the future I see the orange groves, as a rule, owned by growers trained to the business, carried on by their own hands or directly under their supervision.

In my vision I see the newly established experiment station, a tremendous force in developing the industry along new and important lines. Its great influence is already indicated by the frequent visits of large delegations of growers from distant sections to the original Riverside station where the limited field experiments under process for several years are now ex-



J. H. Reed.

hibiting definite results. When the several hundred acres of the new grounds are covered with experimental tests including every unsettled cultural question in producing citrus fruits, the favorable bearing this will have on the future prosperity of the industry is difficult to realize. It is confidently believed that orchardists will very generally avail themselves of the practical results of completed experiments. The practical experiments in irrigation, cultivation, fertilization, pruning, etc., in the 20-acre old, bad conditioned grove the management is just entering on, alone must result in most valuable object lessons to owners of old groves.

One result I confidently look for, the re-establishment of the neighborhood horticultural clubs so popular and useful a few years ago. It will not be enough to read reports and listen to addresses of the specialists or even visit the experiment grounds. Discussion of it all, and even suggestions for new work for the station managers to undertake, will be taken up by these local organizations.

Mr. Shamel's Work

Probably the most important single investigation to affect the future of the industry is that undertaken by the federal department of agriculture in charge of Mr. A. D. Shamel.

It has been demonstrated that from ten to 40 per cent of trees in our bearing orchards produce fruit either inferior in quality or unprofitable in quantity per tree. This heretofore has been considered unavoidable. Mr.

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Shamel has been at work along an entirely new line of pomological investigation, and now after six years of much careful and intelligent effort is prepared to demonstrate that both causes of these great losses to growers are avoidable.

Instead of seeking new or improved varieties the object has been to find means of preserving the varieties that have proven satisfactory and adapted to our conditions. It was found that by propagating through bud sports such desirable varieties as the Washington Navel, Lisbon Lemon, and others, were rapidly deteriorating through producing inferior types. It is now demonstrated that by proper budding the true, normal type of these desirable varieties may be preserved and the product kept to the standard, both as to character of fruit and quantity. Granting this, it is difficult to fully comprehend how vastly the possibilities of our orchards have been increased. Of course the possibility of improving the orchards now bearing is the immediate important result of the investigation, but the possibility of building new orchards with the assurance they will not have to be rebuilt is even the greater acquisition from the investigation.

Application of Water

A few words on two other considerations. I cannot think the best manner of applying water has yet been devised. You are familiar with the results of the federal department's exhaustive tests showing that but about 25 per cent of the water provided for irrigation actually serves its purpose. Of course but part of the 75 per cent of loss occurs in the orchards, but the furrow system is exceedingly wasteful. The evaporation from water while running, from the saturated surface after the water is off, and the entire loss from the few inches of surface earth afterwards turned up to protect that below, leaves but a fraction of the

amount applied for actual service. Whether we are to learn a practical lesson from the natural mulching in forests, where there is such tremendous growth indefinitely sustained, is yet to be shown. The Chases of the National Orange Company of Riverside are now experimenting on several hundred acres with artificial mulching, and Dr. Webber on small plots. If practical mulching is found successful, the saving in water and labor in cultivation will go a long way towards lessening cost of production.

Traction Power

I believe the time is near when the leading orchard expense, the traction power required for manipulating the soil and moving materials and products, is to be largely reduced by the use of the modern motor which has already revolutionized traction service on the roads by taking the place of animal power. It is already being used successfully in orchards of large areas. Mr. Ford's proposition to produce a tractive power at the cost of a good horse, making it economical for small growers, merits attention because of his wonderfully successful practical achievements in other directions.

The limit of time allows me but these few considerations among the many that bear directly on the subject but, as I see it, these alone are quite sufficient to promise a prosperous future for the great orange industry.

* * *

NURSERY BUSINESS FOR WOMEN

Mrs. Lucy Sexton of Goleta, Santa Barbara County, addressed the convention on Growing Nursery Stock as a Business for Women. From her address we give the following:

You can count on the fingers of one hand successful women nursery owners who have been in California for the last 40 years. Of these two were left well established businesses by the death of their husbands; a very

few have established nurseries of their own which have developed into reliable or dependable enterprises. There are many women who handle nursery stock and flowers which have been produced by the professional nurseryman. In fact, every large town has its women selling plants and flowers, and of course in these cases part of the stock is grown at home. Many who have not achieved any great financial success have yet attained success in one feature, that of restored health through the healthful work which the nursery business has forced them into. There is possibly an opening for the nursery woman in growing some special crop, something for which she has a particular adaptability. For instance, one might grow poinsettias to perfection, another petunias, others seeds, bulbs, cut flowers, ferns, etc.

As a rule the woman is not fitted for handling a large and complete nursery business. I would not discourage any woman but think a woman entering this business should keep in reserve part of her funds until she learns from experience how far she can venture. Many failures have been the result of women rushing into work for which they are not qualified. For instance, for many years we have observed nursery people clearing off the oaks from the fields and starting nursery stock without apparently understanding that almost any tree planted on such ground will die because of the oak root fungus with which the soil is infected. There is no use trying to do the impossible. To be successful in the nursery business a woman must have foresight regarding market requirements and as to what the fads in planting will be—the fad of one section may not receive any attention whatever in another. Surely a woman may be fitted for taking orders and selling stock for the professional who has the ability to produce fine goods. In the meantime she could with glass or lath house en-

ter gradually into the business, this feature of the business being more like housekeeping than the rough, outdoor work.

SCHOOL OF FUMIGATION

Prof. C. W. Woodworth of the state university is in Southern California arranging for a school of fumigation covering the week of Monday, August 8, till Friday, August 13. As this page goes to press we do not have the full program in hand but hope to have it in time for it to appear on page 119.

In general, we may say that such topics as tent leakage, chemistry of materials used, dosage, physical effects of the gas, physical qualities of the gas, absorption of cyanogen by the soil, cyanide injury to the leaves, measuring capacity of tents, testing cloth for strength, and, in fact, everything of interest to practical fumigators will be discussed. There will not only be opportunity for discussion, but for laboratory and field demonstration.

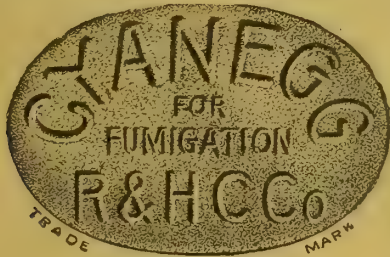
The school should bring together a large number of practical fumigators and orchardists interested in fumigation and will induce a full discussion of best and most economical methods of work.

GROWERS' MEETINGS

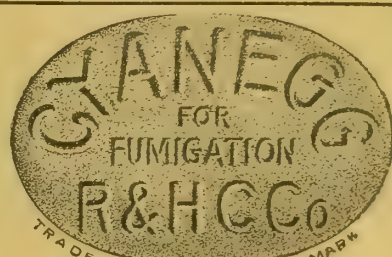
R. S. Vaile, assistant professor of orchard management of the citrus experiment station of the University of California, announces that the following growers' meetings have been arranged by the citrus experiment station in conjunction with committees of local orchardists and packing house managers. The entire local community is invited to be present in each case:

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In the East Whittier frostless belt. Lemons and Valencia Oranges netting an average of \$500 to \$600 an acre yearly. Get best location now, at low opening price. INVESTIGATE TODAY. CHAS. J. CLAUSSEN, 602 Haas Bldg. Los Angeles



Kill the Scale



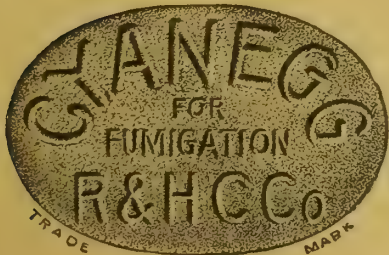
CITRUS TREES CANNOT produce GOOD CROPS of SOUND MERCHANTABLE FRUIT while SUPPORTING CROPS of SCALE (Coccus Citricola or any other kind.)

CLEAN UP THE GROVES

The CLEANED trees, in GRATEFUL APPRECIATION, WILL produce fruit in ABUNDANCE of a QUALITY that will GIVE the GROWER JOY and FILL his POCKETS with GOLD.

FUMIGATION WITH HYDROCYANIC ACID GAS

will CORRECTLY CLEAN Citrus Trees (no other known method will.) NOT EXPERIMENTAL but a PROVED SUCCESS. TWENTY-FIVE YEARS of practical experience has PROVEN the VALUE OF FUMIGATION; ask any successful citrus fruit grower in Southern California.



Mr. Hemphill, manager for C. C. Chapman, Fullerton, Cal., said: "Correct fumigation spells clean trees, more and better fruit, highest prices in the market, and larger returns for the grower."

Mr. O. B. Griffin, assistant manager Leffingwell ranch, Whittier, Cal., said: "The fumigation of citrus trees is a profitable investment for the citrus fruit grower, and properly done will bring large returns."

For information regarding chemicals and supplies, address

F. W. BRAUN

363-371 NEW HIGH STREET, LOS ANGELES



Bargains
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WATER PIPE

Positively
Lowest
Prices in
Southern
California

Don't overlook this opportunity to save money. Thousands of feet of new and second-hand water pipe, oil well and water casing, riveted and surface irrigation pipe. All sizes. Ask for estimate. Prompt shipments. Write, phone or wire.

ADAMS PIPE WORKS

2025-39 Bay St., Los Angeles
Phones: Bdwy. 1264—F1917.
(Under Entirely New Management.)

A Rural Home in Southern California

Ten acres highly improved, best of land. A home for a gentleman, all improvements up-to-date. My business is the creation of new plants by the same method as that used by Mr. Burbank. I have many new varieties that have never been offered for sale. On account of poor health, I am offering my place and all of my plants and farming equipments for \$16,000; will give long time with low rate of interest. No cash required if acceptable security can be given. Start your son in a business that has no competition, and which is profitable. If he don't know how, see if we can make arrangements for me to teach him. A thorough investigation desired. Send card for description.

J. M. Mack, Fallbrook, Cal.

"The Farmers Friend"



Ask your Dealer

Economy of Operation

Operating a 20 H. P. Commercial Gas Engine on 28 gravity gas fuel oil costing 75c a barrel, often running day and night for weeks without stopping and finding at the end of two seasons his engine as free from carbon as if he had been using high grade distillate, is the gratifying experience of W. R. Leonard, rancher of Rio Bravo. Mr. Leonard finds he uses but very little more fuel than if he were burning engine distillate. Write for his full testimonial, and Catalog 18-C.

Commercial Engine Co

2416-32 Porter St. Los Angeles

Branch: 1228 "H" St. Fresno

SAMSON

**STEEL GRIP
TRACTOR**

For Every Farm Use

**\$575.00 — Only — \$575.00****Samson Iron Works, Stockton, Cal. U. S. A.**

When writing advertisers, mention the Cultivator.

Monday, August 2, Bloomington school house, 2 p. m., "Cover Crops in Relation to Orchard Management;" La Verne Orange and Lemon Growers' Association packing house, 2 p. m., "Cover Crops in Relation to Orchard Management."

Tuesday, August 3, Ontario, Chaffee Union high school, "Commercial Scale Control Problems," 9:30 a. m.; "Cover Crops," 2 p. m.

Thursday, August 5, Villa Park hall, 8 p. m., "Cover Crops in Relation to Orchard Management."

Friday, August 6, Redlands, City Park, 8 p. m., "Cover Crops in Relation to Orchard Management;" Whittier high school, 2 p. m., "Cover Crops in Relation to Orchard Management."

Meetings on cover crops have just been held at Porterville and Lindsay.

Deciduous

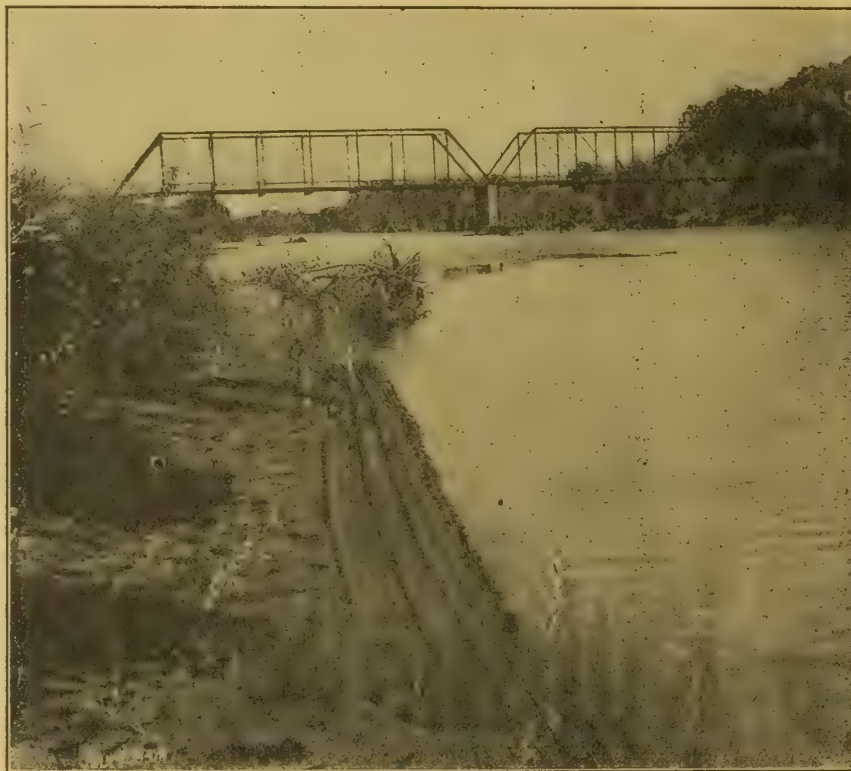
Fruits

COOPERATIVE ADVERTISING

Written for the California Cultivator
By J. G. Berneike

ROME was not built in a day. The present wasteful system of marketing or distribution cannot be changed in a day. While we are waiting patiently or impatiently for this change that is sure to come about because of the demand for it by intelligent and ex-

and nut grower and a cooperator. With one hand I raise walnuts, with the other hand I raise apricots. Why should not my right hand help my left hand, and vice versa? Why should not I, a walnut grower, help to advertise my dried apricots? Why should not I, an apricot grower, help to advertise my walnuts? Are my interests as a walnut grower and as an apricot grower antagonistic or identical? The



San Joaquin River in San Joaquin County.

ploited growers, we may as well see what methods we can employ to help ourselves to better returns.

In a recent issue of the California Cultivator appeared an illustrated article, showing the window package of the walnut growers which will be put out this year and which, I think, is a most promising move in the right direction. Each package that goes into a home will be an advertisement of the walnuts of some thousands of California walnut growers. Cooperation among them has made this possible. And the cost of this advertising? It is only the difference in the cost of a plain gray package and the fancy colored and lettered package, that is to say, it is a very small item. But it serves the purpose, and of course it is paid for by the consumer. This package goes into the home and the kitchen, and until the nuts are all used up it is a constant reminder of Diamond Brand California Walnuts. The manager of the California Walnut Growers' Association expects these packages to go out by the million, and already there is active inquiry for them.

Here is the thought: I am a fruit

latter, of course. Therefore—well, you can see what follows.

The only thing that remains is to go to work at it at once. Why not have a convention of representatives of the different exchanges or associations work out the best method of cooperation in advertising our California products marketed by the various cooperative associations in package form.

The California Walnut Growers' Association, the California Cured Fruit Exchange, the Almond Growers' Exchange and others may well work together, because the interests of the growers that make them up are interlocked and identical. The outside of the package, or as was suggested by the manager of the Walnut Growers' Association, a small recipe booklet inside of the package might be used to advertise the goods of the other associations. The walnut growers put into their package a small recipe book. On the last outside page it could advertise the goods of other associations. The dried fruit and almond growers would do a similar thing for the walnut growers.

If not, why not,

THE WALNUT OUTLOOK

Writing to the Santa Ana Blade as to condition of the coming walnut crop Mr. J. G. Berneike of Orange County writes:

The blight has been making a serious inroad on the promised crop, but there is to all appearances a good crop left on most trees. However, there will be more dropping for the next few weeks with a gradual diminution toward harvest time. Many of the fallen nuts show no black spot, but on splitting them open it is seen that the blight entered at the blossom end, destroyed the vitality of the nut and allowed it to drop. How many more of this description there are on the trees we cannot tell, but most of them are likely to drop within a few more weeks. Under some trees half of the crop seems to be on the ground, and yet a very good crop seems to remain on the tree. Some orchards show blight much worse than others; the same is true of adjoining trees in the same orchard.

Orange County seems to be entirely free of the aphid pest this year, and this fact will go a long way to insure good quality nuts. The difference in the damage done by the blight and that done by the aphids seems to be this: The blight reduces the size of the crop, but quality remains good. The aphids spoil the quality of all the nuts, but the size of the crop is not greatly reduced. Even a hot day, unless it comes rather early in the season, does not affect quality as much as the aphids do. This was quite evident in 1913.

In the case of blight every nut not affected by it is of A1 quality, but in the case of the aphid attack the quality of every nut is reduced because the vitality of the whole tree is attacked, and because practically every nut on the tree becomes covered with honey dew, then with dust and fungus, producing a black heat-absorbing surface. Every day the nut is slightly cooked by the heat on the black side until it is seen at the end of the season that the black side did not develop properly; the shell is flattened, the meat shrunken and darkened.

Judging from the size and hardness of the nuts today they promise early maturity which will help out in marketing for the Thanksgiving and Christmas trade. They will be well ahead of the importation of French and Italian nuts. How this importation will affect the market and the price is somewhat problematical.

Last year France laid an embargo on the exportation of walnuts, but removed it later on. It was reported that they proved to be of very inferior quality, and that they were offered at a low price. The lack of sufficient of skilled harvest hands probably accounts, more or less, for inferior quality. On account of the war some good European customers for French and Italian walnuts are cut off, and the probability is that the United States will be made the dumping ground. The quality is again likely to suffer. The price, therefore, is likely to be low, but in the long run California walnuts, if the quality proves good, will all find a good market at a fair price before the next season comes. Growers will have to learn to be patient for returns if they wish to receive a good price. Otherwise they must sell their nuts at a low price in competition with the imported nuts.

Associations intend to take even more pains in grading for quality than heretofore. The idea is to give California walnuts the highest standing in the market.

The central association will have a walnut cracker in Los Angeles to take care of culls and off-grade nuts. This certainly looks like a wise move which the growers can heartily endorse. The writer advocated a move of this kind two or three years ago through the public press, and he certainly feels gratified to see the move carried out in an improved form. Three grades of walnut meats will be made. The details of this deal will, no doubt, be communicated to the association members in due season.

Last year was productive of very large-sized walnuts, this year will prove quite otherwise. The writer's orchard last year turned out 30 per cent of Jumbos, but this year will probably not reach 5 per cent. The Number Two size will greatly predominate, while the clusters of four, five and more will produce Number Twos. Many orchards are likely to show a large percentage of the latter. It is reported that Ventura County will run heavily to Number Twos.

The packing house of the Santa Ana Valley Walnut Growers' Association is being remodeled in order to take care of the larger crop which is expected. Since there has been an increase of membership, and since the acreage has increased considerably in Orange County, both the association and the county may look forward to the largest output ever harvested, unless, of course, present indications do not continue to hold good.

The walnut trees certainly never looked thriftier than they do this year. There has been plenty of moisture to develop the nuts and to promote vigorous growth of the trees.

SEBASTOPOL APPLE SHOW

The date of the opening of Sebastopol's sixth apple show is August 14, and interest in this annual exposition of the famous products of the Gold Ridge section is increasing at a rate that is intensely pleasing to the management.

The prize list will be ready for distribution soon. Many cups and cash donations have been received and altogether the prize offerings will be greater than ever.

ATTRACTIVE PACKAGES AND PACK

While quality is an essential requirement in the marketing of any farm and fruit product, it is by no means the only factor in selling at the highest price.

First of all the package used should be new and clean. The neater the package, the better the fruit will appear. While the products packed should be of uniform size and color throughout the package, the top layer should be arranged so as to attract the eye of the buyer. Further the package should in every instance be well filled. The buyer is very quick to notice shortness in measure, or any deficiency in a well topped or rounded finish. In small fruit, such as the strawberry, particular attention should be given to have every berry in perfect condition, with the calyx or hull attached. The individual fruits should not be arranged in layers in the box nor should the top be arranged to show a uniform red color, but rather, the calyx should show in with the red. For the best effect, and for particular markets where the grower has steady customers, the berries should be graded into two sizes. This is to give uniformity to the fruit and will make the package more attractive.

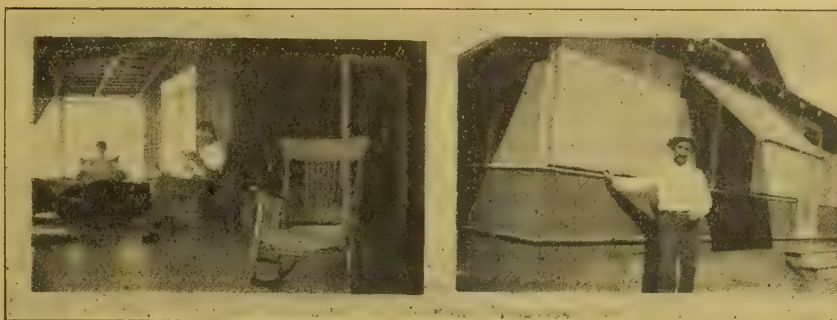
It is a well known fact that the

attractiveness of a package of fruit sells it. The customers are attracted through the eye, and everything that aids in making the package attractive will increase the value of the fruit and ease in selling.

It does not pay to pick inferior fruit with good fruits, for it invariably works against the reputation of the grower. Too little attention to uniformity in pack and grading will often result in a loss to the grower.—E. P. Sandsten, Colorado Agricultural College.

RAT ELIMINATION IN GERMANY

Owing to the very efficient method adopted for their destruction, few rats exist in Germany. As soon as they appear in a building or other place, if ordinary methods fail the police are notified of their existence, and at once an official is detailed to exterminate the rodents. So closely is the matter followed until the effort is successful that rats are seldom seen. No charge is made for the services of the official rat catcher. As a consequence there is little or no market for rat exterminators in Germany.



HOT WEATHER BUNGALOW

Here are a couple of views of an Imperial Valley bungalow which gives the maximum of comfort. The interior is of the porch open on three sides, together with large open living room running entirely through the center of the house. This gives a sweep of the air from every direction. The interior view shows how the screens are lowered when it is desired to keep out the wind or rain. They are hinged at the top and swung

at will to aid in extending the shade of the room.

The gentleman standing at the outside of the house is Mr. Tom O'Neil, whose place is two miles north of the town of Imperial. His home is not only made comfortable by the shade afforded by these large porches, but in addition he has acetylene gas and hot and cold water. There is no reason why the farm home should not have all the comforts offered by the city home.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Age of Majority

Can a girl over 18 years; but under 21, make a valid and binding deed to real estate in this state? A minor makes a deed to real property and dies before becoming of age. Would that deed be good or could it be set aside by his or her heirs?

In this state a girl arrives at her majority at 18 and therefore has all the rights of any other person of majority; therefore her deed would be perfectly valid and binding. The deed of a minor who has died before attaining majority can be disaffirmed by his heirs or personal representatives within reasonable time after the death of said minor. In case the minor is over the age of 18 the consideration for the contract must be restored to the party from whom it was received.

Broken Shaft

I cracked the crank shaft in my pump engine and got a mechanic to weld it. He guaranteed to use Crupp-

crown nickel steel in so doing and to make the shaft stronger than ever for the sum of \$25. I paid him on completion of the job. Six or eight days after it broke in the same place and through the material he put in. I am told by another mechanic the material he used was not the above stated. He refuses to refund the money or in any other way make good. What recourse have I? Could he be prosecuted as a fraud? Can I hold him for the value of the crankshaft less the cost of repair? I was obliged to put in a new one at an expense of \$200.—Subscriber, Pomona.

A mechanic is liable for the breach of his warranty, and you should be able to recover from him the amount of money you have paid to him and also value of the use of your engine during the time that you were deprived of its use. There is no criminal fraud evident.

Squirrel Pest

The pest of squirrels about my place is intolerable and I would like to know how to proceed to get my neighbors to clean up. Have appealed to county horticultural commissioner and he says it is not in his province. Kindly tell me how to proceed to secure abatement of this nuisance under

the state law controlling the pest.—Subscriber, San Gabriel.

There are laws applying to many of the counties throughout the state, making it obligatory upon the owners of property to set out the poison for the squirrels upon their premises. There was formerly such a law applying to Los Angeles County, but it has been repealed. There is a general law covering the squirrel nuisance in Act 3259, approved March 13th, 1909, Statutes of 1909, Page 311, which provides that the board of supervisors of each county may by resolution determine that it is necessary to destroy the rodents in such county and appropriate monies of the county for the employment of health inspectors and purchase the poison to further this work. If any person owning lands or properties infested with rodents fails and refuses to exterminate them, the inspectors may proceed, the cost of such action by the inspectors being charged and made a lien against the property.

Riparian Right

I have been pumping water for irrigation out of a river for about four years. This river runs through my land for about one mile and is all under fence. I would like to find out if it is necessary for me to file a water right and if so, how many inches of water would that give me?—Subscriber, Linne.

You are a riparian proprietor and are entitled to have the ordinary flow

of the creek come to your lands, and you are further entitled to use such waters flowing in this stream as may be necessary for domestic use and for the irrigation of your lands adjoining the stream. It is therefore unnecessary for you to file a water appropriation.

Do You Want

to get

The Most Water

for the least possible cost, then get a

Stearns Double-Acting Cylinder,

operated with a single rod. Write for information.

Stearns Gas Engine Works

1005 North Main Street
Los Angeles

MAKE MONEY OUT OF JIMSON WEED LEAVES

It is amusing to note that the leaves of Jimson Weed, owing to the European war, now command a value. Any school boy in California can make \$2.00 to \$3.00 a day picking the green leaves. The Haas Seed Co., No. 1800 Lincoln Avenue, are paying 1½ cents a pound for the fresh green leaves. All you have to do is ship them in a clean grain sack to the concern and get your money by return mail. They pay the freight. Any quantity shipped providing it is not less than 25 pounds will be received by them and paid for. Now is the time to pick them when they are in blossom.

Write for instructions how to pick and ship them to the Haas Seed Co., 1800 Lincoln Ave., Pasadena, Cal.—Adv.

SELECTED PIPE SECOND-HAND PIPE

Every foot guaranteed. Save one-quarter on your pipe by ordering from us. Write for prices.

Alexander Pipe Co. Inc.

254 North Point Street,
San Francisco

GIANT WINTER RHUBARB

Special Prices on Subdivisions for Short Time

Season of 1913-14, from 5¢ of an acre set out in June and July, 1913, I sold \$673.70 worth of stems.

Now is the time to plant. Booklet free.

W. A. Lee, Covina, California

8 HORSE TRACTOR \$675.00
F.O.B. CHICAGO
Made by International Harvester Co.
16 Horse Power, with 1000 lbs. Hay Press
- Thrasher - Pump - Etc.
8 Horse Tractor to Plow -
Harrow - Cultivate - Etc.
WRITE TODAY FOR FULL INFORMATION.
ARNOTT & CO. 112 So. Los Angeles St. Los Angeles

Spraying Time

and there is no better spray than

Scalefoe

Not only for scale but nearly all insects, worms and bugs that infest plant life. It has been killing them for 15 years, giving the greatest satisfaction without injury, but positive benefit, to the plant. Send for our circular of testimonials or better, try it.

Gallon can, 50c;

5-gal. can, freight prepaid, \$2.00.

Must be mixed 20 parts water to one Scalefoe before using, making it very cheap. Write for prices in barrels delivered at your freight station.

West Coast Seed House

TOMPKINS & CO.
Proprietors

116-18 E. 7th St.
LOS ANGELES

When you think of ROOFING

Whether it be for your new House, Barn, or Chicken Coop

INSIST ON
Pioneer Roofing

It is the one roofing that you can absolutely rely upon under all weather conditions. It wears longer, looks better and costs less than others. Pioneer Roofing is made in grades and weights to suit any type of building—for new and old roofs; bungalows, garages, factories, etc.

WRITE FOR SAMPLES
Prices and Estimates

PIONEER PAPER CO.

Manufacturers

247 S. Los Angeles St. Los Angeles

EUCALYPTUS SEEDS

In large or small quantities, 40 species to select from. Write for free pamphlet, "Eucalyptus Culture." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc.

Trial packets 15c each, 4 for 50c. Write for prices in quantity.

THEODORE PAYNE

345 S. Main St., Los Angeles, Cal.

WOOD TANKS

for Water, Oil,
Wine, Mining
and Cyanide

Pacific Tank & Pipe Company

Manufacturers
WOOD TANKS and PIPE

Wood Pipe for Irrigation, City Systems,
Mining Power Plants

Let Us Figure on Your Requirements
Address Nearest Office

404 Equitable Bank Bldg., Los Angeles, Cal.
318 Market St., San Francisco, Cal.


Farm Adviser Parker of Ventura County has purchased a stereopticon to illustrate his talks to the farmers.

Irrigation



Forestry

ECONOMICAL USE OF WATER

 In the sandy soils of the Umatilla reclamation project in Oregon it is necessary to handle irrigation water very carefully in order to get the greatest benefit. Many tests were made on the project experiment farm located at Hermiston, Oregon, last year, to determine the most economical methods of handling irrigation water. The specialists in charge of this work lay emphasis on the use of short irrigation furrows, ranging from 100 to 200 feet in length, and 20 to 30 inches apart, using fairly shallow, well-opened furrows to facilitate the flow of water. They also advocate that water should be run for only a short time in one place, as loss soon occurs from deep percolation. Since the storage capacity of this soil is very low, only a small amount of water should be used for each irrigation, and frequent applications made to maintain an adequate supply for plant growth. Best results were obtained by using a comparatively large stream of water while irrigating, in order to cover the land as quickly as possible.

On virgin land without crops it was found that a two and one-half inch application of water was retained in the first four feet of soil; five inches of water, applied under identical conditions, filled the first ten feet to its full carrying capacity, and part of the water passed even below this depth. A two and one-half-inch application really does as much benefit to the crop as a five or ten-inch application. After five and ten-inch applications of water were made to two plats having the same kind of soil, there remained an equal quantity of water in each plat to a depth of four feet, and this quantity was practically the same as was retained by the same layer of soil where a two and one-half-inch irrigation was applied.

Where the land was of finer texture than in the above experiment, and bearing a crop of alfalfa, a four-inch application of water was all held in the upper four feet. This shows that in either case, heavy losses result from applying heavy irrigations to the lighter soils.

The frequency of applying water has a very marked influence upon crop yields. An area of alfalfa given 4.4 feet of water in eight applications yielded four tons of hay per acre or 0.92 tons per acre-foot of water used. Another plat given 5.3 acre-feet applied in 12 irrigations, yielded 5.3 tons per acre, or 1.02 tons per acre-foot of water. The results obtained by applying water at this rate were better than when heavier applications of water, such as 9.7 acre-feet applied in 24 irrigations were employed. The excess of water and the additional labor were not justified by the slight increase in yield resulting from the heavier applications of water.

The careful irrigator who has his distribution system, furrows, head ditches, and time properly arranged to enable him to apply just the quantity required to fill the soil to the depth of root penetration, gets a maximum benefit from the water. On the other hand, the irrigator who uses more wa-

ter at a time than his soil is capable of holding, loses by deep percolation, all of it that is not held within the root zone of his crop, and furthermore, he may damage adjacent land by contributing to the underground seepage.

* * *

If California alfalfa growers secured only .92 of a ton for each acre-foot of water they would be discouraged indeed.

COOPERATES TO PREVENT FIRES

The post office department has just repeated in the current postal guide supplement the instructions through which rural carriers are to report forest fires to the proper authorities during the coming season. These instructions were first issued in May, 1912, and during the past two years the cooperation has resulted in the detection and suppression of many fires.

State and federal forest officers will make a special effort this year to get even more value out of the service than has been obtained heretofore. The usual procedure has been for the state fire wardens or federal forest officers to send to the postmasters lists of local wardens and patrolmen, with their addresses and telephone numbers. These lists are given to the carriers with instructions to report forest fires to men whose names appear thereon, or to other responsible persons. This year a special effort will be made to follow up the sending out of the lists by having the patrolmen and wardens meet the carriers personally and to take the initiative in arranging such meetings, and also to map out a plan of action to be followed.

Cooperation between the rural carriers and the federal forest officers will be effective in the 20 states in which national forests exist and with state forest officers in the 20 states which have established their own fire protective systems. It is expected that the services of the carriers will be particularly valuable in helping to protect the new national forest areas in the southern Appalachians.

PROTECT THE FORESTS

Protected forests increase in value. They furnish labor, develop the country, promote the stock raising industry, keep down lumber prices, keep the streams running, afford recreation, fishing, hunting, make a region beautiful, make homes safe and comfortable, make life worth living and a prosperous state, inhabited with contented and industrious people.

The forest service is working to protect the forests, and we ask you as a forest user to lend a helping hand. We need your assistance and cooperation to help in keeping fire from getting started. Will you help? Will you be careful with your camp fire? Dig a pit for it or clear trash from all sides of it. Be sure camp fire is out before leaving it. Be as careful with fire in the forest as you would in your own home. Be sure your match is out before you throw it away. Matches have heads, but they don't use 'em to think with.

Knock out your pipe ashes and throw your cigarettes or cigar stubs where they can't start a fire. Cigar-

ette and cigar stubs have no heads at all; you must think for them! Would you put them in your pocket still burning? No! Then don't put them in the forest burning.

Bear in mind that an ounce of prevention is worth weeks of fire fighting. When you see a fire, if you can't get to it yourself and put it out, will you notify the nearest forest officer?

ARIZONA FARM BUREAU NOTES

Adviser Jas. A. Armstrong of Maricopa County writes:

Alfalfa root rot is showing up in a few places. This disease is the most serious affecting alfalfa in this locality. It should be stamped out by plowing up the infected spot with an additional strip possibly 80 or 100 feet wide around the edges and planting to milo, kaffir, Sudan grass, cowpeas, or some crop not affected by it. If the field is used for pasture it will be a decided advantage to the stock to be able to get a little starchy food to balance the high protein alfalfa ration. It may possibly save some of those calves you have been losing lately.

Mr. Luther Steward of Phoenix believes in a home garden. He uses only that part of a city lot not actually covered by buildings but the quantities of tomatoes, cantaloupes, watermelons, etc., taken from it would run into a neat little sum of money if purchased on the retail market.

David Wallace of Mesa is getting exceptionally good results in his campaign against harvester ants. On one field of stubble harvester ants. On one parently given perfect extermination, on another field, however, which has been irrigated, they are still working after the second application of London Purple.

Mr. F. E. Godard of Phoenix is a mechanical engineer and a farmer. Last Wednesday he tried out a Bull tractor in regular farm work. In a field which was in proper condition to plow and which was fairly well set with Johnson grass, it pulled two disk plows, cutting it 18 inches wide by eight inches deep. In thick Bermuda grass sod it pulled through, but was apparently working over capacity. Mr. J. Stanley Howard, on the Yuma Road owns a Mogul I. H. C. tractor. He reports excellent service.

"The Home Garden at Chandler" will be discussed by Prof. J. J. Thornber at the next open meeting of the Farmer's Union on Thursday, July 29. Prof. A. W. McOmie has also promised to come and tell about a particular kind of hot weather sheep that are giving great results in keeping the ditch banks clean. This idea has been utilized elsewhere to keep foul stuff eaten off the roadside, but their use on the ditch bank is comparatively new.

Grow a garden and cut down the cost of living. This is the time to plant corn for late roasting ears. Lima and string beans planted now will have lots of beans when cool weather sets in.

Saturday, July 31, at 2 p. m., is the date set for the organization of Mesa Farm Improvement Association. Elijah Allen has the matter in hand.

Did you ever eat cantaloupe butter? They say it's good after fresh cantaloupes are gone.

SERVED THE PURPOSE

"Don't care abaht your dawg."

"Wot's the matter with it?"

"Legs too short."

"Well, they reach the bloomin' ground, don't they?"—Life.



Panama-Pacific Exposition Night Illumination. View from Main Entrance. The Jewel City is Wonderfully Beautiful at Night.

THIS WEEK AT THE EXPOSITION

SATURDAY is Horticultural Day, and this is Horticultural Week at the exposition. The State Fruit Growers' Convention which assembled at Palo Alto on Tuesday will devote the week to discussion of matters of interest to California fruit growers until Friday evening, at which time adjournment will be taken and the delegates will assemble in the exposition grounds on Saturday morning. The day will be given up to the study of horticultural exhibits, and in the evening addresses which are declared to be epoch-making will be given in Festival Hall by Professors J. G. Lipman, director of the New Jersey experiment station, and John M. Coulter of Chicago University.

Even Sunday will not be devoted to rest, for there will be several special features during the day, and on Monday morning there will begin 25 different events, some of which will last the entire week, some only four or five days.

To give an idea of the magnitude of this week's work in connection with the great exposition we print a list of those beginning on Monday: World's Bible Congress, United States Conference on Unemployment, International Seaman's Union of America, American Association of Economic Entomologists, Independent Order of Red Men, International Conference, Order of the Star in the East, National German-American Alliance, Association of American Dairy, Food and Drug Officials, Chinese Students' Alliance in the United States (western section), Armco Iron Culvert Manufacturers' Association, American Genetic Association, Delta Gamma Sorority, American Association for the Advancement of Science, American Phytopathological Society, Geological Society of America, American Anthropological Association, Archaeological Institute of America, International Buddhist Congress, Entomological Society of America, Biological Society of the Pacific Coast, Seismological Society of America, American Paleontological Society, Entomological Congress, American Physical Society, American Association for the Study of the Feeble-Minded. There will also be bicycle races and special athletics on this day.

See Our Potato Beetle

It is 10,000 times as large as the largest one you ever saw. Learn how to kill him.

Location—Northwest corner of the Palace of Horticulture.

Ortho Spray Catalogue mailed on request.

California Spray Chemical Co.

Luitwieler Pump

Be sure and see the famous Luitwieler non-pulsating pumping system at the fairs. Write for free pumping booklets.

Luitwieler Pumping Engine Co.
707 N. Main St. Los Angeles

On Tuesday, in addition to many other events, will be held the first meeting of the Society of American Bacteriologists; the American Social Hygiene Association, and the American Astronomical Society.

Features announced for other days of next week are:

Wednesday, August 4: Race Betterment Congress.

Thursday: American Druggists, Typographical Union, Saengerbund, Universal Corn Convention under the auspices of the National Top Notch Farmers' Club, State Beekeepers' Association, Southern California Day, Trinity and Shasta County Days.

Friday: Pacific Coast Students' Congress of Y. W. C. A.

Saturday: Dairy Inspectors' Association, Sacramento Valley Automobile Association.

There are also scheduled for the week special attractions in illuminations and fireworks. The live stock show is giving special exhibitions every day, and we are told that the exhibit of horses, cattle and sheep is exceptionally fine.

It does not seem possible that one or two weeks could give sufficient opportunity for so many conventions and special features as indicated above, but it must be borne in mind that in order to dispose of the 825 conventions which are to be held in connection with the exposition the executive ability of the management has been exercised to the utmost, and though many must be held simultaneously, meeting places have been provided for all.

Coming conventions which will be of interest in connection with the exposition are: Society for the Promotion of Agricultural Science, San Francisco, August 9 and 10; Patrons of Husbandry, National Grange, Oakland, November 10 to 19; American Society of Agronomy, Berkeley, August 9 and 10; American Farm Management Association, Berkeley, August 9 and 10; American Association for the Advancement of Agricultural Teaching, Berkeley, August 10; National Congress of Boys and Girls' Agricultural Clubs, Berkeley, August 10 to 15; Association of American Agricultural Colleges and Experiment Stations, Berkeley, August 11 to 13; Michigan Agricultural College Reunion, San Francisco, August 12; American Association of Farmers' Institute Workers, Berkeley, August 13 and 14; Departmental Congress on Rural and Agricultural Education, Oakland, August 17; School Garden Association of America, Oakland, August 18 to 20; International Congress of Farm Women, San Francisco, August 31 to September 3; American Pomological Society, University of California, September 1 to 3.

The Cereal Conference is a progressive one in more than one respect, being a convention on wheels. Its first meeting is in Merced, the second at the University of California, in Berkeley, and the third is at the State Experiment Station at Davis. The conference is under the direction of the University of California and the United States Department of Agriculture, and participating will be United States experts and other scientific men, among them Carleton R. Ball, of the State University, Dr. E. Ravn, of Copenhagen and M. A. Carleton, of the United States Department of Agriculture.

Many Types of IRRIGATION GATES

Made from Rust Resisting

ARMCO IRON

California Corrugated Culvert Company

Mines and Metallurgy Building

The California Hydraulic Engineering & Supply Co.

Representing

The American Well Works of Aurora, Ill.

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IRRIGATION PUMPS

MACHINERY PALACE P. P. L. E.

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70 Fremont Street

We Will Furnish You FREE ESTIMATES

Deep Well Turbine Pumps

and All Other Types in Operation

SEE THEM AT EXHIBIT OF

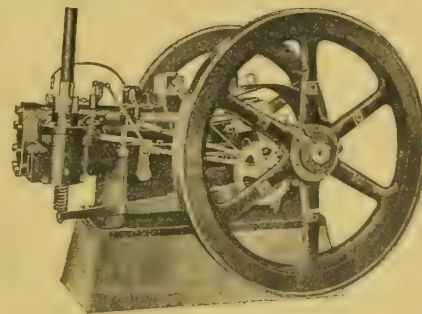
Krogh Manufacturing Co.

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Reg. U.S. Pat. Off.
TRACTOR

Be sure to see our display of Caterpillar Tractors and Combined Harvesters. All moving parts in action. Housings cut to show interior workings. Attractive rest rooms for visitors.

HOLT
Palace of AGRICULTURE
—all of sections 7 and 45, facing main entrance from the water side.
You can't miss it.
The Holt Mfg. Co.
(Incorporated)
HOLT
COMBINED HARVESTER



Western Gas Engine Corporation

Blk. 15S, Machinery Hall, P.P.L.E.

900 No. Main St., Los Angeles, Cal.

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MORE Power for LESS Money

1 9 1 5 Layne & Bowler Pump Exhibit

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Write for Catalog No 30

Layne & Bowler Corp.

900 Santa Fe Ave., Los Angeles



Exhibit and Demonstration of

**Power Sprayers Gas Engines
Centrifugal Pumps**

in operation

Palace of Horticulture

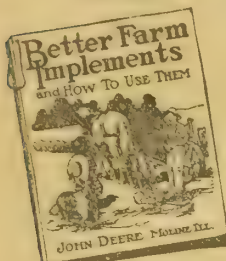
Adjoining Cuban Gardens, which are under the Big Glass Dome.

Bean Spray Pump Co.
San Jose, Cal.

On Monday, August 9, the National Immigration Congress will open its sessions.

John Deere Implements

A New Book
Free



Just Off the Press

Illustrates and describes the most complete line of farm implements. Tells how to adjust and use farm tools under varying conditions. It is a practical encyclopedia of farm implements worth dollars to you—a 168 page text book.

It tells about John Deere Implements: Steel plows, cultivators and harrows; corn planters, disc harrows and beet tools; farm and mountain wagons; manure spreaders; portable and stationary grain elevators and corn shellers; hay loaders, stackers, sweep rakes, mowers and side delivery rakes; motor hay presses; grain drills and seeders; full line of chilled plows; grain binders and corn binders; hit-and-miss and volume-governing gasoline engines.

To get this book free, state what special implements you are interested in and ask for the book as Package No. X-111.



Van Brunt Single Disc Grain Drills

Van Brunt Drills plant any small seed from alfalfa to bearded oats, corn and peas exactly where it will bring the best results—at the bottom of furrows of uniform depth. All the grain is up and ready for harvest at the same time.

No seed is wasted, all the field sown. Van Brunt Drills have an adjustable gate force feed which compels an even, continuous flow of seed from each seed cup without bunching or cracking the seed. It cannot choke up.

The seed is planted at uniform depth. It beats the dirt. Individually adjustable pressure springs can be made to force discs to cut furrows even depth. Seed is conducted from hopper to furrow opener by metal tubes and there protected from dirt until it reaches bottom of furrow.

The "Light Draft Drills"

Van Brunt Drills are so called because they are light weight, well balanced and yet so strong that they work entirely satisfactorily under difficult conditions.

No stub axles are used—none required. Simplified construction makes Van Brunt Drills easier to operate.

Main axles are continuous. Drills are gear driven direct from axle. Each wheel drives half the feeds, insuring smooth running.

Hopper is extra large, well braced and has tight fitting two-piece covers. It does not sag.

Disc bearings guaranteed. They will last lifetime of



drill. Disc blades are high grade steel kept absolutely clean by spring steel scrapers.

Grass seeder attachment can be furnished for any Van Brunt Drill. It will sow broadcast or drill, as desired.

Write for free booklet "John Deere-Van Brunt Single Disc Drills." It explains why you will get the biggest yield by using Van Brunt Drills.

John Deere Publicity Department, Moline, Illinois

POMONA

DEEP WELL PUMPS

For deep lifts, as well as shallow lifts, combined with high heads above surface and through long pipe lines. No auxiliary pump needed for forcing water above the surface.

Built and sold in California over 12 years. Hundreds of buyers will tell you they are always reliable and economical.

No pit required. Does not get oil into the water. Consumes less power per unit volume of water pumped.

WRITE FOR CATALOGUE 103

With Valuable Information on Irrigation

Pomona Mfg. Co., Pomona, Cal.

Our "made right" irrigation valves are good, and not costly

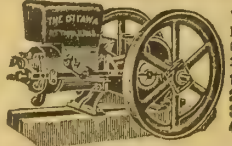
FOR FIGHTING FIRE USE GARSTANG GRASS BURNER

For the city lot owner, or rancher. Designed solely for fighting dangerous and useless brush and weeds. Clears off city lots or vacant acreage. Kills the seed of weeds and rank vegetation at the right season. Safe, inexpensive and an efficient safeguard against accidental fires. Burns oil, distillate or gasoline. Prices on application.

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Economics

on the Farm

A TORRENS TITLE

Written for the California Cultivator
By J. H. McEldowney



HERE is no difference between title or the ownership of real estate and any other kind of property.

There is distrust and unbelief about the right of a person to dispose of real estate, that does not exist about other kinds of property. Few people will buy real estate on the owner's word. He must get what is called a "guarantee," a certificate of title.

These certificates depend upon "record titles," and some of the evils connected with them are: Uncertain titles; imperfect security for loans; copying of papers; mistakes made in copying, or recording; expense of searching titles; escrow and certificate of title expense; loss of papers, either while in escrow, or recording; property tied up in escrow; money of no use while in escrow; long delays in deals; expense of making and acknowledging deeds; certificates worth little when issued and worth less the next day; continuous expense of transfers, etc., many certificates to the same piece of land; defects, flaws, clouds not removed; no change in the value of the title.

These are not attached to the Torrens system, because those titles are real titles, not record titles.

Questions of title, or right, grow out of everything. Someone owes you money. You believe you have a right to it. You start a suit, prove your right and get a judgment. Your belief has become a fact. You know and everyone else may know the money is owing to you. You have a real title to so much money.

With real estate it is the same. You believe you have a title. You cannot be certain, because you have the former owner's old title "brought down." The only title you have you got from him. If he did not guarantee the title then you have no guarantee. He is the only one who can say it is good. You have a deed, and that is the only certificate of title you can have.

You may have what you think is a "guarantee" of title or ownership, but it is not such. That document is only a statement of a search, or examination, and a guarantee of the search. That is all.

Your present title you got from the person who sold you the land. A Torrens title you get from the state. Each time the property changes owners a new title is issued.

A Torrens title is obtained by filing a petition in the superior court, asking the court to allow you to prove your title and have it registered.

This petition must contain all the facts regarding your ownership and any claims, restrictions, etc., that may be against the land. What they are makes no difference. If the title is yours you can have it registered. Your petition must be honest because the state is going to protect you, and there must be no fraud on the state.

Your petition having been filed, the court reads it over and orders a notice published. This is notice to anyone who claims any right in the land to come into court and state what

objections he may have to your having the title. To object many be costly, and no one will come without very good reason.

After the time allowed for objectors to appear has passed, a day is set for hearing the petition, which may take half an hour.

At the hearing you proved your title or right to the land, as you proved your right to the money. Your title has become a "real title," and it is your own, not somebody's old title "brought down." The important fact of the proof is that you and the persons who owned the land before you, had continuous, "open adverse and exclusive" possession for more than five years just preceding the filing of the petition. If this cannot be shown then an abstract is required.

This fact need not be shown if you have a state tax title deed, because the state has held the property for five years before selling it.

At the close of the hearing the judge makes a decree, or order, which gives the land to you, and the title is registered in your name. This occurs but once for each piece of land.

Because the law says: "This decree shall forever quiet the title to the land therein ordered registered and shall be final and conclusive against the rights of all persons known and unknown," your ownership is certain. To make your title more secure, another part of the law provides that no person shall commence any action for the recovery of the land or assert any interest or right in or make any entry thereon adverse to the title registered.

You take your decree to the registrar (recorder). He makes two certificates. One, the original, he keeps, the other, duplicate, he hands to you, and you sign a receipt. This receipt is kept for future reference when deeds or mortgages are filed. This duplicate certificate will cost you one dollar.

This duplicate is proof of your title or ownership, and is just as good any time, five, ten, 50 or 100 years after, as when issued. On the duplicate is shown the page where all claims are entered.

To Sell or Exchange

When you sell or transfer your interest in the land the certificate must be given back to the state.

A deed is not needed. You do away with a deed by writing on the back of (Continued on page 119)

Hawley, King & Co.

224-28 S. Los Angeles St.
Los Angeles, Cal.

Agents for

Los Angeles County

for

**John Deere
Farm Implements**

General Agriculture



CONCRETE FOUNDATIONS FOR FARM ENGINES

To obtain the highest efficiency an engine should have a heavy and firm foundation. This will not only reduce wear and tear incident to excessive vibration but will result in prolonged and better service. Rigidity and durability in the foundation are best obtained through the use of concrete.

The concrete should be mixed in the proportion of one part Portland cement, three parts clean, well-graded sand, and five parts crushed stone or gravel. All parts should be determined by volume and the use of accurate measuring boxes should be rigidly observed. The sand should all pass a one-quarter-inch mesh sieve, and the crushed stone or gravel should pass readily through a one and one-half-inch sieve. In no case should bank-run gravel be used as taken from the deposit. It should be passed over one-quarter-inch and one and one-half-inch screens. That which passes the one-quarter-inch screen is sand, and that which passes the one and one-half-inch screen and is retained on the one-quarter-inch screen is gravel. If the size of the engine warrants the use of a reinforced concrete footing, a 1:2:4 mix should be used for the reinforced portion of the concrete. Sufficient water should be used to form a plastic, wet consistence but not enough to cause separation of the cement and aggregates when placed.

Footings

For footings over six or eight square feet in plan, stone up to two and one-quarter inches may be used. The stone should be graded as this will insure a strong, dense concrete.

Construction

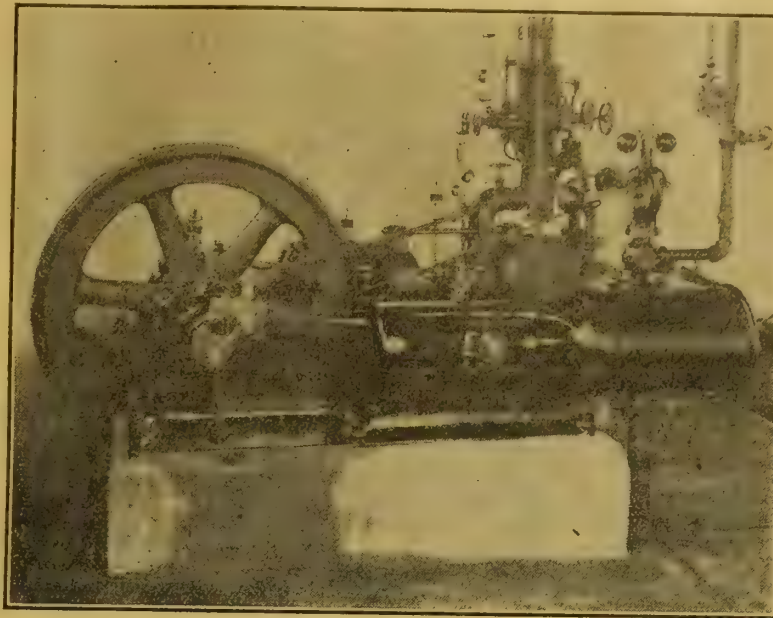
After the exact location of the center line of the foundation has been carefully established, a pit two feet to four feet deep should be excavated, the length and width being the exact size of the footing. Deposit the mushy wet concrete to the depth determined on the plan. In order to thoroughly key the engine foundation to the footing embed three- or four-inch stones in the portion of the footing under the engine so that they will protrude from the footing.

The Forms

A box form eight inches larger in length and width than the engine base should be carefully set over the footing. The inside of the forms should be thoroughly oiled to prevent the concrete from adhering to same. It is essential that the anchor bolts for the engine be carefully spaced and so placed as to take care of any small variations in position. Use a templet for this purpose, and supply for each bolt greased gas pipes of twice the diameter of the bolts, the pipes to be removed before the engine is set. The purpose of the pipe is to provide for such slight adjustment of bolts as may be required. The anchor bolts should be embedded in the concrete at least 18 inches and supplied with cast-iron washers at the lower ends.

After the templet has been accurately set over the forms and the bolts so

arranged that the tops are at proper elevation the concrete is carefully de-



A Durable Concrete Engine Foundation

posited and spaded in the forms. Turn the gas pipes from time to time, thus

preventing them from sticking to the concrete. The concrete along the forms should be carefully spaded to prevent the formation of air-bubbles or pockets.

Damp burlap should be placed over the form after the concrete is placed. This will insure normal setting of the material. After 24 hours remove the form. The engine may be set and the bolts adjusted after 48 hours. Before the engine is set remove the gas pipes referred to above and when the engine

is finally placed, fill the space around the bolts with 1:1 mortar.

Do not use the engine until the base is at least two weeks old. If necessary to have an exhaust or drain pipe, this may be installed in the form before the concrete is deposited.

NURSE CROP WITH ALFALFA?

There is a decided difference of opinion among growers of alfalfa concerning the relative value of a nurse crop. Many are of the belief that a nurse crop is essential to a good stand of alfalfa, while others are of the opinion that a nurse crop is unnecessary. As a rule on sandy lands that are subject to blowing, or on heavy lands which have a tendency to bake, a nurse crop may be of benefit as it reduces blowing or baking. Oats and barley make the best nurse crops because they shade the ground the least. They should be seeded at the rate of from 30 to 40 pounds to the acre. These should be cut for hay so as not to shade the alfalfa plants too long. Unless the soil is subject to blowing or baking it is not advisable as a general rule to use a nurse crop. Under dry land conditions a nurse crop should never be used, as the moisture supply is too limited to sustain two crops at one time.—James Marshall, Colorado Agricultural College.

It is a safe rule to always cut alfalfa for hay when the new shoots for the next crop start out from the crown plants regardless of whether the plant is in bloom or not.

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Long Handle, Round Point Shovels, per doz. \$4.85 or 50c each
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D Handle, Square Point Shovels, per doz. \$4.15 or 50c each
Long Handle Spades, per dozen \$3.75 or 40c each
D Handle Spades, per dozen \$3.75 or 40c each
Long Handle Scoops, per dozen \$3.75 or 40c each
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26-Gauge Painted Corrugated Iron Per 100 Sq. Feet. \$2.60

\$30 Fiber Wall Board for \$19

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—A fine quality oil wood stain for interior finishing. Much used for bungalows, etc. Makes a fine lasting finish.

65c to 75c Shingle Stain 50c
—All colors of shingle stain except gray that should be selling at 65c to 75c per gallon, now going at 50c per gallon, in five-gallon lots.

READY ROOFING (Paper)

\$1.15 to \$1.75

1 ply Double Sanded, per roll \$1.15
2 ply Double Sanded, per roll \$1.40
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1 ply King, per roll \$1.25
2 ply King, per roll \$1.50
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Snow-white Roofing Paper, per roll \$1.75

TOILETS AT \$15.50

COMPLETE WITH VITREOUS CHINA BOWL AND TANK

—These toilets are perfect in every respect and fully guaranteed. Made by the famous Johnson Bros., Hanley Limited, England. Both bowl and tank are of vitreous china, and wood seat is fitted with finest post hinges. Other dealers would charge you at least \$20 for toilets like these. —Special steel enameled bath tub \$8.00. Other sizes \$8.50, \$9.00 and \$10.00.

Freezers 1/2 and Less

—Dana Ice Cream Freezers always command full price. Here they are at 1/2 and less. 2-quart size, reg. \$1.75, now \$.75
3-quart size, reg. \$2.25, now \$1.00
4-quart size, reg. \$2.50, now \$1.25

\$2.25 House and Floor Paints, \$1.25 Gallon

—Secured by us at bankrupt sale; lot includes many famous brands. Good assortment of colors.

\$2.50 Varnish Remover, \$1.75 Gallon

—The famous Hi-Lo varnish remover, said by many to be the most practical of the many varnish removing preparations.

\$2.25 Wall Paints, \$1.25

—Made especially for use in kitchens, bathrooms, etc., as steam and heat do not affect them. Can be washed with soap and water without injury.

12c Wall Paper Paste, 10c Pound
—Dry wall paper paste, the kind that we sell to regular paper hangers. Other stores sell this regularly for 12c; our price, 10c pound.

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California CultivatorA Journal of Horticulture and
Agriculture

By

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M. C. Holman, Manager.

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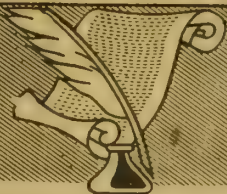


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geles, California, as Second-Class Matter.**Thursday, July 29, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**MAIL AT P. P. I. E.**We have a letter from Superin-
tendent F. B. McStocker of the Model
Postoffice at the P. P. I. E., in which
he says:"We have a general delivery at this
station, and mail addressed to General
Delivery, Model Post Office, will be
delivered."This will be a great convenience to
attendants at the exposition who may
wish to receive word from their friends
and it will also give them opportunity
to view the workings of this model
office.**HONOR FOR HILGARD**A marble chair is to be placed
in the Greek Theatre of the Univer-
sity of California in honor of Dr. Eu-
gene Woldemar Hilgard, practically
the founder of the science of the geol-
ogy of the soil, known the world
around for his discoveries in reclama-
tion of alkali soils, the man who estab-
lished at Berkeley the first agricul-
tural experiment station ever founded
by an American university, and first
dean of the college of agriculture and
first director of agricultural experi-
ment station of the University of Cali-
fornia.**AGRICULTURAL ALUMNI**Alumni of agricultural colleges
are invited by Deputy State Horti-
cultural Commissioner Weldon and Prof.
Van Norman of the University farm
school at Davis to meet during the
Fruit Growers' Convention, which is
now in session at Stanford. The ob-
ject is to perfect a permanent asso-
ciation of college men engaged in agri-
culture. All are invited irrespective
of their colleges. There are hundreds
of college men in this state activelyengaged in advancing the science of
agriculture. They will doubtless be
greatly aided in their work by such
an organization.**WICKSON FOR PRESIDENT**An Eastern admirer of Dr. E. J.
Wickson of California has written sug-
gesting that since the American Pomo-
logical Society meets in this state this
year there should be an organized ef-
fort to make Dr. Wickson the next
president. The gentleman who makes
this suggestion is Mr. Stark of Mis-
souri, who says in a personal letter:"The leading men of the East feel
that Dr. Wickson should be honored
and elected the next president. He has
accomplished a great work."Certainly this organization would be
honored by having Dr. Wickson as its
president, and Californians will be
proud to aid in his election.**AUTOS IN NATIONAL PARKS**The American Automobile As-
sociation writes regarding rules in
certain national parks, which are ob-
noxious to some motorists. "There
may be some motorists who will com-
plain that the regulations are unhap-
pily strenuous, but it is believed that
a general spirit of good sportsman-
ship will prevail on the part of those
using their automobiles for touring the
parks, and because of this the rules
will be accepted as they ought to be.
With motorists showing a full appre-
ciation that they are pioneers in the
opening of the parks, they will demon-
strate ways and means for better all
round regulations that are bound to
come from the experiences this year
of those in charge of the parks and
the enforcement of the new rules. It
is an experiment not without certain
risks, and obviously there must be no
accidents to mar the opening."Doubtless some of the restrictions
are deserved and others which are
not will give way as time passes and
the department is assured motorists
will be careful. Of course it is mad-
dening to have so much red tape as to
prevent true enjoyment of the beauties
of these great parks.**ENFORCING FRUIT LAW**The horticultural commissioners
of Fresno and surrounding counties
have been asked to meet at Fresno at
an early date in conference with fruit
growers to devise means of enforcing
the new fruit standardization law.
President Madison of the Associated
Raisin Company is urging that fruit
shippers generally encourage heartily
the enforcement of this law which be-
comes effective August 7th. In an in-
terview quoted in the Fresno Republi-
can President Madison is reported as
saying:"The fruit standardization bill is one
of the finest things that ever happened
to the green fruit industry. Without
such regulation there have always
been a few unscrupulous or short-
sighted shippers and packers who were
willing to unload inferior products on
the market. The reputation of Cali-
fornia fruits has been undermined by
such bad methods."What we hope to do is to get the
substantial members of the industry,
growers, packers and shippers, behind
the law at the outset. We want to
devise means for helping the horti-
cultural commissioners who will look
after enforcement of the law in each
county."**EXPANDING**The magnificent work done by
the Associated Raisin Company in se-
curing satisfactory prices for raisin
producers is certainly an encourage-
ment to all cooperative effort. We are
glad to see that President Madison
and the association are extending their
influence and their efforts to benefit
the dried fruit business generally. It
is now proposed that instead of mak-
ing up solid cars of raisins for certain
of the smaller markets the Associated
ship combination cars of raisins and
various other dried fruits. Mr. Madi-
son says:"We will only handle dried fruits
when orders come in for them, but
have branched out because we believe
we can stimulate sales of raisins.**HORTICULTURISTS MEET**Special Report from the
Convention.—The word horti-
culture covers much in its general
application. It is being gener-
ously used at the state conven-
tion at Palo Alto, for the whole
range from apples and bees to
potatoes and pears is being dis-
cussed. Yesterday and today
(Tuesday) the county horti-
cultural commissioners and the
West Coast Potato Growers As-
sociation have been running com-
petitive attractions, but this
evening we are all to gather to-
gether and listen to a welcome
from David Starr Jordan, then
get down to four days of hard
work with the State Fruit Grow-
ers.Representative scientists from
many parts of the United States
are here, and a few, a very few,
practical growers. They are ap-
parently depending on the Cul-
tivator to get the news and pass
it on. It will endeavor to meet
expectations and will be here all
the week.Today the potato growers dis-
cussed the serious situation
which confronts them. They are
producing 30 or 40 sacks per
acre, and they made comparison
with that English lord who has
produced 2000 bushels on one
acre. Eugene Grubb told them
that they must observe funda-
mentals, such as soil tempera-
ture, porosity of soil, planting
whole seed, feeding a "balanced
ration," making proper selection
of seed, etc.Prof. Fitch, a potato specialist
of Indiana, spoke of more fertile
soil. Mr. Shear, an expert of
the department, spoke of need
of experimental planting, and
Mrs. Neilsen, Mr. Essig, Mr.
Crawford, Miss Clark, Mr.
Phreaner and others urged ne-
cessity for more careful work.An effort is being made to se-
cure a fund to finance experi-
mental work. More of that an-
other week.The horticultural commis-
sioners of the state are here and
having fine sessions. Better
work in every county will result
from the convention.—C. B. M."As this company has now estab-
lished offices in New York and Chi-
cago and has made arrangements with
brokers in every city of the United
States and Canada to sell its raisins,
it has been concluded that it will be
necessary for the company to go into
the dried fruit business for the pur-
pose of retaining good representatives
to sell our raisins. It would not be
possible to hold a broker of any ability
unless we were able to supply him
with a full line of California dried
fruits."This, we hope, will put the Associ-
ated Raisin Company in the selling line
with all other reputable concerns sell-
ing California dried fruits through
brokers."This company has no intention of
speculating at all, only purchasing
enough dried fruits to fill its require-
ments."**Agricultural Notes**Fuel molasses is to be shipped from
Hawaii to California to compete with
California fuel oil.A two-cent letter postage went into
effect between the United States and
the Dutch West Indies on July 1.Dried loganberries from Oregon are
becoming popular in New England. A
Boston firm has sent an order for
20,000 pounds.California ginned 49,835 bales of cot-
ton in 1914. Part of this was pro-
duced in the Mexican portion of the
Imperial Valley.The provincial government of Nova
Scotia has appointed a commission to
investigate the Torrens system of reg-
istration of titles to land.New Zealand fruit growers suffered
heavy losses from freezing of fruit last
season. Many saved their crops by
burning oil in the ordinary oil can cut
in two.Owing to the participation of Italy,
Egypt's biggest supplier of paper, in
the war, the Egyptian newspapers are
suffering from a serious shortage of
paper and have been reduced in size.The Fruit Growers' Association of
New South Wales, at its recent meet-
ings, is considering methods of keep-
ing out of Australia imports of lemon
juice from America, Italy and Japan.Reports from the cranberry sections
of Cape Cod, New Jersey, and Wis-
consin state that in consequence of
the cold weather a few weeks ago the
cranberry crop will be short at least
30 per cent.The newly discovered halibut banks
off the coast of Washington and Ore-
gon are yielding heavy catches. One
schooner recently brought in to Seat-
tle a 160,000-pound catch, which was
sold for \$10,800.Japan had a very heavy crop of pea-
nuts last year and closed the year
with prices 15 per cent higher than
the previous year. She is also ex-
porting more extensively of apples
than ever before.A contract has been closed by a
merchant in Habana for the importa-
tion from the state of Washington of
about 750,000 feet of western spruce
timber. This undoubtedly will be the
first consignment of Pacific Coast tim-
ber to Habana by way of the Panama
canal.Italian growers are very successful
in raising and packing tomatoes. Over
20,000,000 pounds of canned tomatoes
are shipped annually to the United
States and about half that quantity
to South America. The skins are used
for stock feed; the seeds for oil, both
edible, and for soap making.A limited market for dried fruit
from the United States is growing
in southern Italy, particularly in ap-
ples, pears and prunes. It is reported
that the demand for prunes has de-
veloped through the advice of some of
the Italian doctors, who prescribe this
form of food for their patients. The
prunes are retailed in Naples at 27
cents per pound for the best variety,
23 cents for the medium variety, and
18 cents for the third grade.The potato is Alaska's most impor-
tant crop. The Fairbanks station has
grown potatoes for market for several
years. The main object was to dem-
onstrate that good potatoes could be
grown in the interior, and the farmers
in the vicinity have taken the hint
and nearly all now grow a consider-
able acreage of potatoes, one estimat-
ing his crop as high as 50 tons. Potatoes
are usually classed as a money
crop. Hog raising is also being started
at Fairbanks, the hogs to be fed the
small unmerchantable potatoes.

Agricultural News Notes

of the Pacific Coast



Northern California

The dove season in Yolo County will open September 1.

Several inquiries have been received from London for prune quotations.

The supervisors of Sonoma County have fixed the official weight of bread at 12 ounces.

Apple packing plants in the Sebastopol section are busy on Gravensteins and other early varieties.

Farmers' short courses at the university farm at Davis will be held from October 4 to November 12.

The California Fruit Canners' Association has announced that its cannery at Marysville will not be opened this season.

The Sacramento Valley Development Association has declared itself in favor of holding an annual live stock sale at the State Agricultural Park at Sacramento.

All 14 of the counties included within the Sacramento and San Joaquin drainage district are reported to have filed suits to prevent action by the district reclamation board.

A swine breeders' association has been organized at Dixon, Solano County, among members of the farm bureau. Committees are working on the formation of four others in the county.

Work of constructing the irrigation system for the Anderson-Cottonwood district will soon be started. When completed 32,500 acres of Sacramento River bottom land will be brought under the ditch.

The Davis Almond Growers' Association held its annual meeting Saturday, July 12. Yolo County furnishes about 80 per cent of the almonds handled by the California Almond Growers' Exchange.

Redding, Shasta County, has already subscribed \$2800 for the Northern California exposition to be held there early in September. Siskiyou, Lassen and Modoc Counties will join with Shasta in the exposition.

Trinity County has decided to take part in the Northern California Exposition to be held in Redding, Shasta County, September 4-10. The county horticultural commissioner will have charge of the Trinity exhibits.

A unit of the Nevada County farm bureau has been organized at Chicago Park and the following officers named: President, W. F. Bierwagen; secretary, C. K. Brown; directors, Mrs. W. S. Koeller, Mrs. F. C. Bierwagen and Judson Steele.

Supervisors of Siskiyou County have notified the Central Pacific Railway Company of their intention to raise the valuation on their timber lands from \$2.50 to \$8.00 per acre. This would increase the total assessed value in the county approximately \$1,000,000.

The California Ripe Olive Association has selected John J. Avis of San Francisco, president; L. Underhill, San Francisco, secretary; George C. Mansfield of Oroville, director of exploitation, and the following directors: A. B. Miller of Fontana; W. P. Hammon of Oroville and San Francisco; F. B. McKevitt of Sacramento.

Central California

Kings County has 55,000 acres in alfalfa.

September 23-25 is the time set for the district fair at Merced.

Merced sends out an average of 25 carloads of tomatoes weekly.

There are more ducks on Tulare Lake now than are usually seen.

Stanislaus County has 20,000 acres in wheat this year. Five thousand is the usual acreage.

The ripening of Malaga grapes is late this season in Fresno County. The first carload shipments are not expected to leave until August 15.

County Horticultural Commissioner Roullard of Fresno County will have an exhibit of pests of the orchard and garden at the Fresno district fair.

Merced tomato growers are sending out shipments averaging 25 carloads per week. The crop is reported heavy, the fruit fine and prices satisfactory.

The newly organized swine breeders' association of Madera County has over 50 members with locals at Alpha, Dixieland, Fairmead and Chowchilla.

It has been stated by the secretary of the Japanese Association of Fresno that about 1000 Japanese will be brought into the country to handle the fruit crop.

Horticultural Commissioner Marchand of Madera County is suggesting that a squirrel drive similar to the rabbit drives held years ago might be a very good thing.

Horticultural commissioners from four counties adjoining Fresno have been asked to meet green fruit packers at Fresno to discuss means of enforcing the new standardization law which will take effect August 7. The date of the meeting is not yet announced.

A cooperative creamery association has been formed in Los Banos with the following directors in charge: O. L. Divens of Dos Palos, C. H. Waggoner and M. A. Bettencourt of Los Banos, Joseph Vocha of Volta, M. G. Oliveria and P. L. Tagilo of Gustine and M. A. Marshall of Ingomar.

Directors of the California Green Fruit Association are urging growers and packers not to unload inferior fruits on the market before the standardization bill becomes effective on August 7. There is some apprehension that unscrupulous interests will in this way seriously injure legitimate fruit shipping.

The Associated Raisin Company has decided to go into the dried fruit business. Most of the dried fruits will be handled in assorted car orders. Manager Madison explains that this is to help the sale of raisins, as many jobbers in the East are not willing to order a full car of raisins but will order a combination car.

At a recent meeting of the Porterville Citrus Association the following directors were elected for the ensuing year: C. E. Robin, Peter Ting, C. E. Lewis, W. L. Ross, M. V. Hutcheson, John Orr, H. C. Carr, W. P. Bartlett, A. J. Newbury. The officers chosen are Peter Ting, president; H. C. Carr, vice president and treasurer; J. A. Milligan, secretary and manager.

Southern California

Slicing of beets began at the Oxnard sugar factory July 24.

The bean harvest will begin in Orange County about the middle of August.

The farm bureau of Ventura County has distributed over 3000 gallons of squirrel poison to its members.

By the collapse of a beet dump at San Onofre, San Diego County, four men were quite seriously injured.

One hundred and seventeen attended the last meeting of the Bonsall local of the San Diego farm bureau.

Preliminary tests made at the sugar factory at Huntington Beach show good content of sugar in this season's crop of beets.

Vegetable growers of San Diego County have formed a cooperative marketing association. It is known as the Winter Vegetable Union.

The Orange County Fruit Exchange reports a number of sales of oranges in the Philadelphia market during the past week at prices ranging above four dollars.

Yucaipa's apple show will be held for three days in the month of October, exact dates not yet having been determined. The prospects are for a heavy crop.

The Mound Farmers' Club held its July meeting on the 20th. There was a large attendance. Addresses were made by members of the Good Roads Commission.

Seventy carloads of potatoes is the estimate of the season's shipments from Puente in the San Gabriel Valley of Los Angeles County. Most of the shipments now are being made to Texas.

The experiment of Forest Supervisor Charlton in trying out goats to keep the fire breaks cleared has been unsatisfactory, the goats preferring to browse on the grassy pastures in the valleys.

The California Grape Protective Association has decided to put an initiative constitutional amendment before voters next fall, providing for compensation for grape growers if the prohibition campaign succeeds.

The Heber Melon Growers' Association has begun suit against W. S. Fawcett for \$22,000, which the Association claims is due for cantaloupes delivered. Mr. Fawcett has been handling their entire output this year.

Farm Adviser Weinland of San Diego County has been given an assistant in the person of George H. Wilson. The assistant's principal work at present is to be the organization of the Winter Vegetable Union.

Several experimental shipments of grapes packed in sawdust have been sent from Imperial Valley to Eastern points. The first shipments were of the Persian 21 variety. Later experiments will be made with Malagas.

The Armour Packing Company of Los Angeles will fight complaint of short weight butter made by the Orange County sealer of weights and measures, who states that he has found butter short-weighted as much as an ounce and a half to the pound.

The Coast

Chandler, Arizona, is practically assured of a creamery station.

Hop growers estimate the 1915 yield of Oregon at about 140,000 bales.

Clarke County, Washington, reports prospects for a good yield of prunes.

Chandler, Arizona, shipped out 14 carloads of produce on one day last week.

Fine agricultural exhibits are expected at Arizona's State Fair to be held November 15-20.

Several alfalfa seed raisers of the Yuma Valley of Arizona have purchased seed hullers.

The annual meeting of the Arizona Wool Growers' Association was held at Flagstaff on July 6.

A Yuma wool grower has imported a number of fine Dorest sheep from Ohio to breed up his flocks.

Cattle growers of Yavapai County, Arizona, at their annual meeting in July, re-elected all the old officers.

One wool grower of Deer Lodge, Montana, has just sold his entire clip of 34,000 pounds at a price of 26 1/4 cents.

The New Mexico Cattle Growers' Association has changed its name to New Mexico Cattle and Horse Growers' Association.

The Yakima Valley Fruit Growers' Association has shipped 314,074 pounds of cherries to one cannery at four cents per pound.

An advance of two cents has been made in the Portland hop market. Several offers of 13 1/2 cents have been made for the 1915 crop.

Stockmen of the Southwest are protesting before the Interstate Commerce Commission the proposed increase in freight rates on live stock.

The Farmers' Union of Chandler, Arizona, held an open meeting July 24. Prof. McOmie of the state university talked on "Sheep on the Ditch Bank."

The New Mexico Cattle and Horse Growers' Association offers a standing reward of \$25 for each wolf or mountain lion killed, and \$10 for each pup or kitten.

During the last two years the dairy industry in Benton County, Washington, has increased largely. Cows in dairy herds now number 2300 against 500 two years ago.

The federal government is testing the possibilities of hog raising in Alaska. Several pure-bred Duroc Jerseys are being tried out at the experiment station at Fairbanks.

Broom corn growers of the Chandler, Gilbert and Higley districts in Arizona met at Chandler, July 12, to sign up contracts and devise plans to secure cooperatively owned threshers.

Prosser, Washington, is getting ready for its corn and hog show October 21-23. Forty-six children have entered the pig club contest and many are in the corn growing contest also.

A trainload of 26 cars of steers was shipped from Phoenix, Arizona, on one day last week, destined for the French army. Forty to 50 carloads of horses will also be shipped from the same point to France within a few days.

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Live Stock and Dairy



THE VALUE OF CROSS-BRED WOOL

By Robert F. Miller

THE following is a communication lately received from Mr. S. B. Hollings, wool expert of Bradford, England, with reference to two fleeces of cross-bred wool that I sent him May 15, 1915 in order to get an expert opinion regarding the spinning count and the valuation for comparison with United States prices. The fleeces were from Mr. Thornton Glide's flock at Davis, in this state, and one was a Dorset-Rambouillet cross and the other a Shropshire-Rambouillet cross. The fleeces were of spring lambs that had been shorn in August and then again in March. The second clip, August to March growth, is the one in question.

"10 Booth St., Bradford, Eng., June 30, 1915. Mr. R. F. Miller, University Farm, Davis, California. Dear Sir: I beg to acknowledge receipt of your letter of the 4th inst. and the safe arrival of the two fleeces.

"Re: the Dorset Horn Rambouillet hogget. I like this by far the best. The staple is more compact, it shows 56's quality, which is really fine half-bred, and is a valuable fleece. The worst feature is the shortness of the staple, and this wants to be at least four inches long, but being shorn last August and in March accounts for the shortness. It is most difficult to say the exact price of this fleece in London, but conclude it will be worth somewhere from 32 to 34 cents per pound, in fact, if it were longer and more like a full 12 months' grown fleece, such as we got from New Zealand, it would be worth today from 38 to 40 cents.

"Regarding the Shropshire Rambouillet fleece, this is only 50's quality, the staple is more loose and fuzzy, and would go for lower class yarns. The value here is about two cents per pound less than the previous fleece. It is lighter in grease, but it lacks a little compactness.

"I might say that both fleeces are essentially hosiery wools, although the first named could be easily used for carded woolens. Were I the owner of this flock I should discard both these crosses and on my Merino ewes I should use either the Romney Marsh, Lincoln or Leicester ram. You would then get a bigger sheep, more valuable for mutton purposes, and I think on the whole a more valuable fleece of wool. Yours faithfully, S. B. Hollings."

Food for Thought

The above letter certainly has some points of interest to the woolgrower of this country. In the first place Mr. Hollings estimates that this wool would be worth six to eight cents per pound more were it of normal length of 12 months' growth. Wouldn't it be worth while to consider shearing once a year! He also terms it a hogget, although it has been shorn twice.

The most important item, however, is the matter of price. Similar wool in this country at the present time is selling for twenty-four cents a pound, or a difference of eight to ten cents in favor of Bradford prices. At that rate wool growers could almost afford to ship by parcel post and make

money. There is a joker in the wool business. How can we get him out!

Lastly, Mr. Hollings strongly recommends the long wool Romney Marsh, Leicester or Lincoln cross in preference to a Dorset or Shropshire.

ANOTHER OFFERING OF HOLSTEINS

McAlister & Son now announce the dates for their next great sale of Holsteins. It will be at Sacramento, October 6 and 7, and will be in combination with some stock from the ranch of Morris & Sons. Regarding the stock which he will offer, Mr. McAlister writes: We will consign about 75 animals of the 150 head of the very best of our herd, there being in the number over 30 A. R. O. cows, some with very large official milk and butter records. In this consignment will be about 20 daughters of our senior herd sire, King Pontiac Topsy, who is one of the best individuals and one of the best transmitting sons of the great King of the Pontiacs. King Pontiac Topsy now has already nine A. R. O. daughters, and this number is bound to increase. He has 164 A. R. O. sisters, among whom are the world's record 44-pound cow, K. P. Pontiac Lass, and nine other cows with records of over 30 pounds of butter. These daughters of King Pontiac Topsy are the most uniform bunch of daughters we have ever seen sired by a bull, and this sale offers a magnificent opportunity for a breeder who wishes to build up a foundation stock of the very best blood to buy all of these grand-daughters of King of the Pontiacs that we offer. It may be of interest that we have commenced the practice of weighing all of our heifers at the ranch at a certain age, and the average weight of all the heifers so far weighed at ten months' old has been 752 pounds. This is an increase of growth of about 30 per cent above the average for that age, so that buyers will know that when purchasing stock from us they will get nice growthy individuals possessed of a great constitution.

Among the good ones which we will mention that will be sold are Uneeda Korndyke Abbie, the second highest daughter for both milk and butter of her famous sire, the \$25,000 bull, Johanna McKinley Segis, whose dam is the 40-pound cow, Johanna De Kol Van Beers, who sold for \$7000 at public auction, the highest price ever paid for a dairy cow. Another is Abbie Korndyke Segis, a 21-pound three-year-old daughter of Johanna McKinley Segis.

MANURE FROM ONE COW

In experiments conducted at the Louisiana agricultural experiment station, says the Northwestern Stockman and Farmer, to determine the amount of manure and urine produced by the dairy herd of 20 cows in one year, it was found to be 175 tons of manure and 70 tons of urine. The average amount of manure produced by one cow in a year was 17,520 pounds, a little less than nine tons, and the average amount of urine produced by one cow in a year was 6935 pounds, or a little less than three and one-half tons. It takes little thought to see the value of a cow from the fertilizing standpoint or to see the profit in preventing unnecessary waste of manure.

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THE NEW DAIRY QUEEN

How fleeting is the glory of a dairy cow queen is best exemplified by the eclipse cast over the yield of the erstwhile leader of the dairy world, FINDERNE HOLINGEN FAYNE, by her stable mate, FINDERNE PRIDE JOHANNA RUE, the new world's champion. The reigning queen, like her predecessor is one of the brilliant luminaries of the Holstein-Friesian breed, and her remarkable performance, announced June 16 last by the Advanced Registry Office of the Holstein-Friesian Association of America breaks all world's records for butterfat production, not only those of black-and-white cattle, but for all other breeds, by yielding in 365 consecutive days 28403.7 pounds of milk (13211 quarts) containing 1176.47 pounds of butterfat. The average yield per day, therefore, was slightly over 36 quarts of milk and four pounds of butter per day.

The Holstein-Friesian heifer, FINDERNE HOLINGEN FAYNE, the deposed

If the thermometer is 75 degrees or higher, wipe him all over with a damp sponge. Use vinegar water if possible. Do not turn the hose on him.

Saturday night, give a bran mash, lukewarm; and add a tablespoonful of saltpetre.

If the horse is overcome by heat, get him into the shade, remove harness and bridle, wash out his mouth, sponge him all over, shower his legs, and give him two ounces of aromatic spirits of ammonia, or two ounces of sweet spirits of nitre, in a pint of water; or give him a pint of coffee warm. Cool his head at once, using cold water, or, if necessary, chopped ice, wrapped in a cloth.

If the horse is off his feed, try him with two quarts of oats mixed with bran, and a little water; and add a little salt or sugar. Or give him oatmeal gruel or barley water to drink.

Watch your horse. If he stops sweating suddenly, or if he breathes



Entrance to University Farm at Davis.

queen, whose achievement was the world's record for the short period of but three months produced in a like period 24612.8 pounds of milk (11448 quarts) containing 1116.05 pounds of butterfat.

The new world's record cow, FINDERNE PRIDE JOHANNA RUE, calved at the age of five years, four months and four days. Her sire is JOHANNA RUE 3d's Lad and her dam is JONDINE PRIDE. She was bred by Bernard Meyer of FINDERNE, New Jersey, and is now owned by the Somerset Holstein Breeders Company of Somerville, New Jersey.

The test was made under the supervision of the New Jersey agricultural college. In a seven-days' test beginning 358 days after she calved, the new world's champion produced 602.4 pounds of milk and 28.831 pounds of butterfat, and for a second time established a new mark in the division of records begun not less than 240 days after calving.

HOT WEATHER RULES FOR THE HORSE

Load lightly, and drive slowly.

Stop in the shade if possible.

Water your horse as often as possible. So long as a horse is working, water in small quantities will not hurt him. But let him drink only a few swallows if he is going to stand still. Do not fail to water him at night after he has eaten his hay.

When he comes in after work, sponge off the harness marks and sweat, his eyes, his nose and mouth, and the dock. Wash his feet but not his legs.

short and quick, or if his ears droop, or if he stands with his legs braced sideways, he is in danger of a heat or sunstroke and needs attention at once.

If it is so hot that the horse sweats in the stable at night, tie him outside with bedding under him. Unless he cools off during the night, he cannot well stand the next day's heat.

NUTRITIOUS OLEO?

Broadly speaking, there are three kinds of fats, namely, body, milk, and vegetable fat. The energy value of these fats is about the same, but there is a great and important difference in their nourishing value. Chemical analysis shows that each one of these fats is made up of different fats and in varying proportions but it does not reveal any particular difference in the food value of these fats. Just why milk fat is more nutritious than vegetable or body fat has not as yet been explained. Experiments conducted by the Wisconsin station have shown that there is something in the milk fat that is not found in vegetable or body fat.

Dr. McCollum, who conducted this work, fed some rats pure protein, pure carbohydrates and fats. The protein was supplied by the casein of milk; the carbohydrates by milk sugar and starch; and the fats by olive oil, lard, and tallow. He found that the rats grew in a normal way, as far as could be seen, for three to four months, which is about one-third of their total growing period. They remained in this condition for many



Watch Out When Your Animals Are On Dry Feed

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine

I want all you farmers to get this fact riveted in your mind regarding stock—that the only animals that are paying you a profit are those that are digesting their feed—bowels regular every day and absolutely free from worms.

And it is just at this very time of year when stock are not in that condition, because they are cooped up, deprived of exercise and for the last few months have been on dry feed, which does not contain the laxatives and tonics so abundantly supplied by grass.

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Being both a Doctor of Medicine and a Doctor of Veterinary Science I formulated Dr. Hess Stock Tonic to aid digestion, make stock healthy and expel worms.

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IT MUST NOT LEAK OUT THE JUICES or admit the air to the silage.

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weeks without making further growth. When milk fat or fat extracted from the yolk of eggs was fed instead of lard, olive oil, or tallow, the rats resumed their growth. This shows that the fats of milk and eggs possess some property for growth and sustenance of life that are not contained in body or vegetable fats.

We must not lose sight of the fact that milk fat and egg fat are prepared to nurture young, and nature has given these fats a substance or substances not found in other fats. Butter is made from milk fat and oleomargarine is made from body and vegetable fats, therefore oleomargarine is not as nutritious as butter. Statements made by so-called food experts and by dealers in oleomargarine that oleomargarine is as nutritious as butter, are false. Science has come forth with a new verdict, and the person, whether he be chemist or food expert, who asserts that oleomargarine is as nutritious as butter because it contains about the same amount of energy, is asserting that which is not true, for the experiments conducted at the Wisconsin experiment station show that egg or milk fat is required to bring forth a full developed animal.—Hoard's Dairyman.

DAIRY CONFERENCE

The directors of the National Dairy Union, and others interested in the development of the dairy industry in this country, met in Washington, D. C., early in June for the purpose of outlining some definite action relative to the dairy legislation in the next congress. The main object of the conference was to perfect the oleomargarine legislation that has been before congress for several sessions.

The main features of the new bill which were decided upon are as follows:

The adoption of a color standard for oleo, and the prohibition of its manufacture or sale under any conditions when the degree of yellow coloring is greater than that prescribed.

The limiting of the amount of butter fat that may be incorporated in oleomargarine to 5 per cent.

The adoption of a uniform tax rate for all oleomargarine.

The other features of the bill were left in the same shape as the National Dairy Union had prepared in a measure introduced in congress nearly two years ago, known as the Haugen Bill.

The two plans of taxing oleomargarine ten cents for colored and one-fourth of a cent a pound for uncolored, has been the cause of much fraud practiced upon the government, and has been used to create a false impression that all oleo was paying 10 cents a pound tax, when the great bulk of it is only paying one-fourth of a cent tax. By prohibiting the coloring of oleomargarine, and a straight tax, the greater part of the deception and fraud will be stopped.

The Pennsylvania law, which prohibits the sale of margarine in imitation of yellow butter, proves the contention of the dairymen that uncolored oleomargarine sells for less money and is of better grade than when colored, and does in no wise interfere with oleo honestly manufactured and sold for what it is.

It is generally conceded that the time has arrived for oleo to be sold for what it is, and at the same time giving consumers a substitute for butter at a reasonable price, instead of paying excessive prices as has been the case too often in the past.

The probabilities are that oleo manufacturers who are anxious to sell their product on its merits at a reasonable profit will not oppose this measure.

Other matters discussed were the correct labelling of imitation evaporated milk products.

Veterinary Queries



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Spiders on Pigs

What can I do for my pigs? They have a small insect on them that looks like a small spider. They rub nearly all their hair off.—Subscriber, Olive.

There is a small red spider that sometimes get on pigs and is very annoying. Use a solution of zenoleum; 25 parts of water to one of zenoleum. Put it in a sprinkler and when they are eating is a good time to use it. You should also sprinkle the place where they sleep and the spots where they rub. Repeat this once a day for a week.

Infectious Eye Trouble

The cattle in a pasture in our neighborhood are affected with some eye trouble. It starts with a small white spot in the center of the eye and within three days the eye is all white and the animal becomes blind. In about a week a small spot in the center becomes depressed. The eye seems to be very painful and sensitive to the light. It is badly swollen but there is very little discharge. It will appear in one eye, and in about three days the other becomes affected. It does not seem to be contagious. The trouble is only in pastures where the stock get water in mud holes. Stock in adjoining pastures supplied with water from troughs are not affected. Hogs that have access to mud have the same trouble.—Subscriber, San Dimas.

The trouble is due to infection from a fungus or microscopic bacteria that must be in the wet land. The animals should be moved to a dry field and those that are affected should be separated from the well ones and treated. Wash out the eyes with warm water that has a little borax in it. Then with a camel's hair brush paint the eye with a five per cent solution of nitrate of silver. If ulcers form on the eye, dust it with calomel. Repeat the treatment once a day until they begin to clear up. The animals should be kept in a dark place, as the light causes pain and retards recovery. If it is necessary to turn them out for feed, then tie a cloth to the horns or halter so it will cover the affected eyes and keep the light out.

Oily Butter

We are having trouble in making butter. It is oily and will not separate from the butter-milk. Cow is about four years old and dropped her second calf five weeks ago. Appears healthy in every way and is in good condition. We are feeding alfalfa and oat hay, green corn, etc., beside some bran and rolled barley. The butter will not granulate and remains soft and oily. It hardens when we use ice, but soon melts down again. What can be done?—Subscriber, Orange.

We are inclined to think that part of the trouble is with the cow and part with the handling of the milk and cream. Butter that is made from cream that is too warm is inclined to be oily. The milk and cream should be kept in a cool place and should not stand over two days at this time of year. The cream and churn should be cooled to 62 degrees Fahrenheit and when the butter comes it should be washed with cold water. Work the salt in quickly and set in a cool place to harden. Change the condition of the cow by giving her a physic of aloin half an ounce, turpentine two ounces and raw linseed oil one quart. Mix and give at one dose. Follow with these powders. Powdered gentian four ounces, powdered nux vomica two ounces, bicarbonate of soda six ounces and enough fenugreek to make one pound. Mix and divide into 20 powders. Give one powder morning and evening.



Poultry for Profit



ECONOMY IN RAISING POULTRY

Written for California Cultivator

By E. Cauble



BUT few people raise poultry without some definite point in view, either for profit or to supply meat and eggs for their table. In order to make the industry profitable in any branch, it is necessary to use the greatest economy in every detail, yet this must not be a mistaken economy. The best economy is providing everything necessary for the flock to do their best. In the first place, good stock; second, good housing; third, sweet, clean feed and water; lastly, good care and cleanliness. The greatest mistakes in poultry culture are bad feed, cheap, spoiled or musty feeds not considered fit for anything but chickens, and overcrowding, which cuts down the profit on many good flocks; better have fewer hens and give better care; cull out often and keep only the choicest birds. It is also a mistake to keep anything but pure bred stock, as they lay more eggs, look better and sell better in the market, not considering the extra profit from hatching eggs and breeding stock. Pure stock can be had for the same price as mixed, so do not make such a mistake.

Housing

The cheapest and most serviceable house is the single slant roof facing the south, 14 by 16 feet wide, with half open front, rear wall five feet and front eight feet. This house makes a fine scratching shed for winter and is cool for summer. This style of house can be built for less than 75 cents per foot, has matched lumber for rear wall and droppings board. This will house 50 hens for every ten feet in length, using four roosting perches.

Care of Droppings Board

Much labor and time can be saved by the proper care of the droppings board. In winter or damp weather the droppings board should be generously sprinkled with air slaked lime to which has been added a handful of flowers of sulphur. This keeps down odor and facilitates the cleaning, also removes the necessity for cleaning so often, once a week being sufficient when lime and sulphur are used. This absorbs extra moisture

and prevents vermin from working in the droppings.

Gypsum is also a good absorbent for the droppings board and when mixed with the droppings makes a very valuable fertilizer. Gypsum is also a good shell producer and is very beneficial to the fowl's health when a little is used in the mash feed occasionally.

Feeding Economy

The hen must have sufficient feed

POULTRY SHOWS

San Jose, Santa Clara Valley Association, annual show, Oct. 6-9, 1915, Chas. R. Harker, San Jose, secretary.

San Francisco, Panama-Pacific Exposition, international poultry show, Nov. 18-28, 1915, D. O. Live-ly, Panama-Pacific Exposition grounds, secretary.

Redwood City, San Mateo County Poultry Association, Nov. 11-14, 1915, Fred West, Burlingame, secretary.

Phoenix, Arizona State Fair, Dec. 8-11, 1915.

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klusman, secretary.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Seattle, Wash., King County Poultry Association, Jan. 10-15, 1916, C. W. Melville, 473 Colman Building, Seattle, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

at all times. If she is to be profitable as an egg producer she must not be overfed one day and starved the next, as this deranges her digestive organs and she cannot produce. Care in every detail of the feeding must be observed when hens are kept in confinement; their appetites must be satisfied, and to do this a variety of feed should be furnished. High priced feeds are not so necessary as a variety of green feed. Greens are cheapest and absolutely essential. However, alfalfa meal may be substituted with fair results but should be scalded for laying hens and fed dry in mash for young stock.

A hen should have sufficient feed to produce eggs and give a slight gain

in condition, otherwise she lays herself out of condition and stops producing till her condition becomes normal again, which may be six weeks or more.

Cracked grain in deep litter early mornings induces exercise and should be fed during winter if not at all times, but as most hens lay before noon, something that satisfies should be fed in the morning, and nothing yet has taken the place of a moist mash, and nothing can be made more cheaply and be as effective. Fifty per cent of this mash can be chopped green alfalfa, green barley, chopped green corn, fodder or most anything green at hand. When combined with bran and middlings or egg food and moistened with sour milk it makes an ideal mash, well relished, and sends the hens cackling to the nests. When feeds are as expensive as they are the present year it is all the more essential to give the fowls extra care, making each hen produce and keeping no more hens than you can give this kind of care. This season has been hard on the poultry industry for many reasons which we are not able to control, but as we are assured of a banner crop of all kinds of feed this season, the coming season without doubt will be a good one for poultrymen. Therefore do not make a mistake and let all your flock go; retain the best you have, raise a supply of pullets, as eggs will be up in price shortly, and by fall egg prices will soar and you will then want a nice flock which if well fed will be just as profitable as in former seasons.

NATIONAL EGG LAYING CONTEST AT MOUNTAIN GROVE, MISSOURI

Forty-five entries for the next contest have been received. The rules governing the contest are for free distribution, thus giving the breeders of all breeds and varieties the same opportunity to enter the contest. Therefore half of the pens are already taken. Those who wait to see how their pullets develop before entering are usually disappointed, for all pens are taken long before the contest begins which is November first.

One of the factors which determine egg production is the feed ration, not merely the quantity of feed given but the elements contained therein.

Many questions are asked as to what a balanced ration for egg production is and how to balance the ration. In order to determine more fully the effect of certain rations a number of experiments are in progress at this station. Each pen contains twenty hens.

The test with a wide ration, containing elements which would produce three yolks for each white, produced 379 eggs in the first six months.

The test with a narrow ration, containing elements which would produce two whites to each yolk, produced 269 eggs.

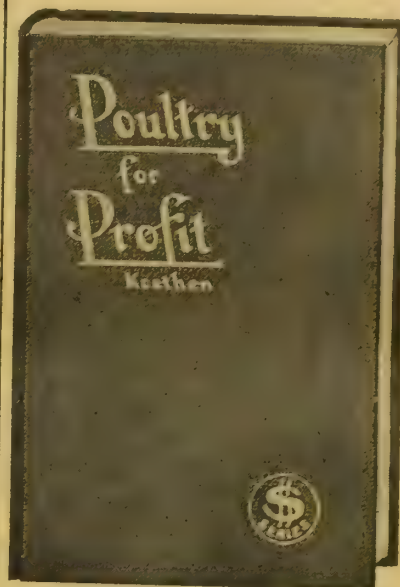
The test with a ration containing equal yolk and white material but without minerals to produce the shell, produced 161 eggs.

The test where the ration contained elements necessary to produce equally all parts of the egg produced 1603 eggs in the same time. This ration is called a balanced ration for egg production.

The yolk is principally carbohydrates; the white, protein; and the shell, minerals. Thus the three parts of the egg are made from three kinds of food.

The following ration is fairly well (Continued on page 114)

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Poultry for Profit

BY

Jean A. Koethen

Graduate of University of Calif.

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For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Avocado Buds—Challenge, \$10.00 hundred; Royal, Walker's Prolific, \$5.00; Taft, Harmon, Ganter, Northrup, \$2.00. C. E. Utt, Tustin, Cal.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Cactus and Trees—Cash Nurseries, Sebastopol, Cal.

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Berkshires—Boar pigs for sale, Butte City Ranch, Butte City, Glenn Co., California. N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

SCHOOLS AND COLLEGES

Wanted—About seventy-five young men and women to enter The WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address, WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal. 634 E. Main St.

Telegraphy—Stenography, bookkeeping, English branches. Positions guaranteed. Mackay Business College, Los Angeles

RABBITS

Leading Rabbitry in America—Flemish Giants a specialty. Prize winning and heavy weight stock. Scored and sold on their merits. Inquiry and inspection solicited. Catalogue on request. Empire Rabbitry, Empire, Cal.

Bosworth's Imperial Red New Zealand Hares sold at hard times prices. NOTHING BETTER. Geo. M. Bosworth, Geyersville, Cal.

Caldwell's Royal Red New Zealand scored and sold on merit. Catalog free. Caldwell Bros., Box 613R, Los Angeles.

SEEDS AND PLANTS

For Cattle, Hog and Poultry Forage plant now Luther Burbank & Mediterranean Spineless Cactus. ROBINSON CITRUS NURSERIES, R. F. D. 35-A, San Dimas, Cal.

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs. \$8.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co. Cal.

For Sale—Burbank Spineless Cactus, at prices you can afford to plant them for feed. Send for catalog. S. A. Moore, Huntington Beach, Calif.

DUCKS

Ducks—High Class Mammoth Imperial Pekin Ducks for breeders. Also young ducks and eggs for sale. Best stock in California. Stone Canyon Poultry Farm near Sawtelle, California. P. O. Address, Sawtelle. Sunset phone, Santa Monica 565 M.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

FARM LANDS FOR SALE

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale Cheap, residence lot 50x120, at East San Diego Villa Heights, will let it go for \$100.00; good title guaranteed; act quick. Address Box No. 43, Palermo, Calif.

WANTED

Wanted—To hear from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas. Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

TURKEYS

Eleven White Holland Turkey Hens and one fine tom. All mature birds and strong breeders. Excellent layers. H. McKusick, Box 733, Calexico, Cal.

KODAK FINISHING

Developing, 10c per roll. Printing, 2 1/2 x 3 1/4, 2 1/2 c; 2 1/2 x 4 1/4, 3c; 3 1/4 x 4 1/4, 3c; 3 1/4 x 5 1/2, 4c. Denver Store, 706 S. Hill St., Los Angeles.

JIMSON WEED

You can get 1 1/2 cents a pound for the fresh picked leaves. We pay cash and the freight besides. Write for particulars. Haas Seed Co., 1800 Lincoln Ave., Pasadena, Cal.—Adv.

NATIONAL EGG LAYING CONTEST

(Continued from Page 113)

balanced for egg production. Instead of using the terms "carbohydrates" and "protein," the terms "yolks" and "whites" have been used. All fractions are omitted, therefore the table is only approximately correct.

Grain.	Lbs.	Yolks.	Whites.
Cracked corn....	150	382	198
Wheat	150	365	273
Mash			
Wheat bran.....	20	31	41
Middlings	20	41	44
Corn meal.....	20	52	27
Ground oats.....	20	39	31
Gluten meal.....	20	46	86
Beef scraps.....	30	32	332
Alfalfa meal.....	5	7	9
O. P. oil meal....	5	8	25
Totals	440	1003	1066

Questions

THE EDITOR

and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Curing Lemons

Is there a simple formula for curing lemons by means of borax?—Subscriber, Colusa.

We do not understand what our subscriber means by "the use of borax." The only process used in the large packing houses of the state is to simply hold the lemons in storage until the demand calls for them. In this storing the rind is somewhat thinned and made flexible or cured. Where lemons are grown on scale-infested trees and are picked covered with smut then they are washed, and in the washing borax and soap powder are sometimes used. So far as curing for home use is concerned, we have seen some of the finest lemons kept indefinitely by being carefully picked from the tree, put in layers alternating with wet sand. This prevents evaporation, and we have seen lemons taken from such a pack three or four months after storing with an almost perfect kid-glove texture.

Sudan Grass as a Feed

An inquirer wishes information as to whether Sudan grass, being one of the sorghums, might not have the same fault which the latter have of developing at times prussic acid or certain poisonous substances which cause death of stock. The matter was referred to others, and Prof. Woll of

The hens had access to oyster shell and grit and were given two pounds of fine table salt and four pounds of fine charcoal in the above mash.

The basis for computing the number of yolks and whites produced by each kind of feed was that one pound of carbohydrates would produce 3 1-3 yolks; one pound of protein would produce 16 2-3 whites, this being the rate of the average hen here at the station.

It will be seen that from 150 pounds of corn 382 yolks and 198 whites are produced, therefore it is not a balanced ration. The extra yolks are built into fat. In this way hens fed on corn alone get extra fat, and we hear the old expression that "the hen is too fat to lay." The expression should be changed to read, "The hen can't lay is the reason she gets too fat."

A simple ration may be made as follows:

	Yolks.	Whites.
150 pounds cracked corn.	382	198
150 pounds wheat.....	365	273
25 pounds beef scraps..	25	275
Totals	772	746

This ration would give best results where the hens have free range, because it contains no mash, thus requiring the hen to do the grinding of the food. The kind of food she gets on the range should be considered, however.

If a hen has the ability to produce 24 eggs in one month when fed a balanced ration, but is fed an unbalanced ration like corn alone, which produced two yolks for each white, instead of making 48 yolks in order to produce 24 eggs, she makes only the 24 yolks, but can complete only 12 eggs. The same thing is true of the whites. It is the same proposition of "no chain being stronger than its weakest link." No hen will lay more eggs than the weakest part of the feed ration.

the state university writes in effect that this grass has been so recently introduced that it has not yet been tested in this particular. He knows of no instance in which poisoning has resulted from its feeding, but suggests that under certain conditions it may prove more or less poisonous, as is common with some of the sorghums. He would advise careful observation, especially when feeding green, second growth Sudan grass or when pasturing after periods of extreme drouth when the plants are stunted and afterwards caused to grow.

Diseased Beans

I enclose specimen of bean plant that is affected with some disease. The entire field is affected and the trouble seems to be becoming worse each day. If possible, please give cause and cure.—Subscriber, Laton.

The plants were sent to the pathological laboratory at Whittier, and Mr. Clayton O. Smith answers: "I find the beans are affected with a root fungus, Rhizoctonia. No practical remedy for this trouble is known. All diseases of plants beneath the surface of the soil are difficult to treat."

Knots on Alfalfa

I mail roots of alfalfa. My nine-acre field is generally affected and is killing out in spots. The fields adjoining are not affected. What is the cause and what may I do to cure it?—Subscriber, Potter Valley.

Mr. C. O. Smith of the pathological laboratory answers: "The alfalfa

knots are caused by a fungus, Urophlyctic alfalfa. This trouble is aggravated by excessive moisture in the soil. Allow the ground to dry out thoroughly in the affected spots and do not use it again for some time."

Making Over Orchard

In changing a 14-year-old navel orchard over to Valencias, would it be advisable to interset the Valencia trees? At what age should the navels be removed?—Subscriber, Whittier.

If the root stocks of the navels are in good, healthy condition, it seems to us that the quickest way to make over this orchard would be to bud the old stocks. It is very difficult to plant young trees in a bearing orchard and get them to start satisfactorily. One may dig holes so as to destroy the roots of the old orchard trees for some distance around the young trees, and by giving them plenty of moisture and fertilizer possibly fair results may be obtained, but at best the growth will be somewhat indifferent as long as the old trees remain in the ground. It would probably not be best to leave the old trees longer than one or two years after the planting of the new before they should be removed entirely. In budding, one would perhaps lose three years, and then, if the stocks are vigorous and the budding has been done by careful and expert workers, the new orchard should be almost in full bearing. Navels should not be removed till they are perhaps a hundred years old, but under modern methods of culture that length of useful life may not be possible. How to hold our orchards up to full production is a question now being discussed by every orchardist. If the navels are being replaced because of exhaustion or deterioration, then we would assuredly remove the trees and put the land in fit condition again by heavy fertilizing and growing annual crops for a period. If they have ceased to be productive the soil probably holds the answer as to why.

Growing Onions

Please give information as to growing onions and whether they will do well in this section, about six miles west of Corona?—Subscriber, Corona, Riverside County.

We take it that "six miles west of Corona" would bring the location of the bottom lands along the Santa Ana River, and in that case presume the section is admirably adapted to onion culture. However, only a knowledge of the particular tract would enable us to answer this question definitely. Rich, dark, peat-like lands are usually required for best results. Heavy adobe lands, however, are not adapted to onion culture. As to suggestions for onion culture, would refer our subscriber to the Cultivator of March 4, 1915, containing reprint of an article by Mr. Murdock; also article on the growing of sets, by H. R. Mitchell, appearing in the issue of July 8.

Diarrhea in Calves

Have diarrhea among my calves. What can I do to stop it? Am using lime water and feeding to the worst victim an egg beaten in a pint of milk twice a day.—Subscriber, Owensmouth.

For answer we quote from "Diseases of Cattle," issued by the United States department of agriculture: "Calves which suck their dam are not frequently affected with this disease, though it may be occasioned by their sucking at long intervals and thus overloading the stomach and bringing on indigestion, or from improper feeding of the dam on soft, watery, or damaged foods. Suckling the calf at irregular times may also cause it. Exposure to damp and cold is a potent predisposing cause. Calves which are separated from their dams and which receive considerable quantities of cold milk at long intervals are liable to contract this form of indigestion. Calves fed on artificial food, used as a substitute for milk, frequently contract it. Damaged food, sour or rotten milk, milk in dirty cans, skim milk from a dirty creamery skim milk vat, skim milk hauled warm, exposed to the sun, and fed from unclean buckets, may all cause this disease. The calf is depressed, appetite poor, sometimes there is fever; the extremities are cold. The

dung becomes gradually softer and lighter in color until it is cream colored and little thicker than milk. It has a most offensive odor and may contain clumps of curd. Later it contains mucus and gas bubbles. It sticks to the hair of the tail and buttocks, causing the hair to drop off and the skin to become irritated. There may be pain on passing dung and also abdominal or colicky pain. The calf stands about with the back arched and belly contracted. There may be tympanitis. Great weakness ensues in severe cases, and without prompt and successful treatment death soon follows. In treating the disease first remove the cause. Give appropriate food of best quality in small quantities. Make sure that the cow furnishing the milk is healthy and is properly fed. Clean all milk vessels. Clean and disinfect the stalls. For the diarrhea give two raw eggs, or a cup of strong coffee, or two ounces of blackberry brandy. If the case is severe, give one ounce of castor oil with a teaspoon of creolin and 20 grains of subnitrate of bismuth. Repeat the bismuth and creolin with blackberry brandy and flaxseed tea every four hours. Tannopin may be used in dose of 15 to 30 grains."

Aphis on Watermelon

We send watermelon leaf covered with insects. What are they? They

have killed cucumbers and are now on the melons. Have tried soapsuds, air slaked lime, etc.—Subscriber, Ceres.

This is simply a serious infestation of aphis. If when they first appeared the vines had been burned without scattering the insects it would possibly have saved the other plants, though it is also possible they might have come from infested weeds around the field. These insects are usually killed by the use of tobacco sprays, formulas for which have been given in former Cultivator.

Auto for Pumping Water

Would like to hear from readers of the Cultivator as to their success, or otherwise, in using a Ford or other automobile for pumping water for irrigation. Supposing a turbine pump was used how would the belt be arranged to the best advantage?—D. K. Saddler, Stockton.

Doubtless there are many automobile owners in California who are using power from their machines after the manner suggested by Mr. Saddler of Stockton and we are going to pass this inquiry on to them and ask for suggestions as to how best to connect up the auto to give power for use on the ranch. Will be glad to purchase the first good photograph which any subscriber may send to us illustrating method of using the auto for power.

The Cultivator aims to be the paper for the farmer and by the farmer. Our best hints come from the practical field workers. We believe this suggestion should bring from these practical workers just what this subscriber is asking for.

Trespassing Chickens

How can I keep my neighbors chickens off my ranch? They destroy my crops. May I be permitted to shoot or poison them?—Subscriber, Los Angeles.

We believe that shooting or poisoning your neighbor's chickens or stock of any kind would give grounds for a suit to recover the value of the stock. If your place is surrounded by a substantial fence and you can make a showing of actual damage caused you can recover such amount of damage as you can prove. We believe also you can proceed under the estray law and ask that any stock which is at large be impounded.

BIG DEBTS

Very black, very small, and very much impressed with the importance of her mission, she stood before the kindly lady of the house.

"Well, Ophelia?"

"I've de washwoman's little girl, an' mommer, she says, please len' her a dime. She got to pay some bills."—Southern Woman's Magazine.

Important Announcement to Dairymen



NOW IS THE TIME TO PLACE YOUR ORDER FOR THIS SEASON'S SUPPLY OF

LARROWE'S



OWING to the enormously increasing demand we suggest that you place your order with your feed dealer now, for your season's requirements, to avoid possible disappointment.

Those who have used this succulent, milk-producing, vegetable feed and know the certain and profitable results obtained by its use, do not need to be told of its richness in carbohydrates and its general desirability as a ration for dairy cows.

To those who are not using LARROWE'S DRIED BEET PULP we will gladly send evidence of remarkable results obtained by prominent dairymen and feeders, together with valuable suggestions concerning feeding.

GET 1 TO 5 LBS. MORE MILK FROM EACH COW

If you are feeding an exclusive diet of alfalfa, just try the addition of Larowe's Dried Beet Pulp and see what a difference it makes. Not only will it increase the milk flow one to five pounds per cow a day—the increase being noticed almost immediately—but it will make your cattle healthy, sleek-coated, bright-eyed and prolong their milking periods.

Larowe's Dried Beet Pulp is light, bulky, succulent and easily digested; absorbs water very quickly and swells to about six times its original bulk; is cheaper than bran and other mill feeds, yet produces better results.

It is put up in convenient 100-lb. sacks, and may be had either plain or with molasses. Ask your dealer for "Larowe's."

WRITE FOR OUR BOOKLET—"PROFITABLE FEEDING"

—containing valuable information on feeds and feeding together with instructions for feeding dried beet pulp. Sent free on request. Address:

THE LARROWE MILLING COMPANY
933 CENTRAL BUILDING
LOS ANGELES, CAL.

Vanilla Ice Cream

Try This Recipe and Preserve
for Future Reference

What more welcome treat can you offer the folks at home these hot days than a nice cold dish of good ice cream? The number of different flavors in which ice cream is made at the present time is surprising, but the old-fashioned vanilla flavor still remains the favorite with the great majority. The following recipe for making vanilla ice cream, therefore, should be preserved in every home.

One cup sugar, $\frac{1}{2}$ teaspoon salt, 1 tablespoon cornstarch, 1 pint milk, 1 or 2 eggs, 1 pint cream. Mix the cornstarch with the sugar, and add to the slightly beaten eggs. Pour on the milk slowly, add the salt, and cook over water until thoroughly done. When cold, add the cream and freeze, flavoring with vanilla to taste.

While all the ingredients in ice cream should be good, the results will not be satisfactory unless the best quality of cornstarch is used. One of the best known woman writers in this country on culinary subjects says that those who have the best success with cornstarch recipes always depend upon the famous Kingsford's brand.

Kingsford's Cornstarch has stood the test of time. It costs no more than inferior kinds. Insist upon Kingsford's and ask your grocer for the little Corn Products Cook Book, which contains hundreds of valuable culinary hints.

Prevents Waste of Water

AMERICAN Surface Irrigation Pipe Everlasting Why Experiment?

American Steel Pipe & Tank Co.
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Los Angeles

Branch: 1228 "H" Street, Fresno
Also Single and Double Well Casing

Hot Weather Pests

Ants One of the Most Aggravating Annoyances

Hot weather means different things to different people, but it always suggests one very disagreeable thing to the housewife—and that is ants.

Ants are small and unassuming but they are busy all the time, and have an unhappy faculty of intruding themselves where they are not desired.

What could be more annoying than to have a mess of ants over-running the food you are about to serve your family or guests?

Women everywhere will hail with delight, therefore, the announcement that a simple remedy has at last been devised that will rid them of this plague forever.

A baker in Los Angeles, after much experimenting, devised a paste which not only drives ants out of a house, but keeps them out thereafter.

So great a demand was immediately created that it was necessary to put up this remedy for general use under the name of Kellogg's Ant Paste—which can be obtained at all modern grocers or druggists. Try a package today and watch the results.

Bee Keepers Supplies

We keep a full line of supplies and are prepared to serve beekeepers promptly.

Write for Catalogue C

A. I. ROOT CO.,

58 Sutter St. San Francisco



THE TALE OF A GENIAL CUSS

By Ralph Bacon, Banning

Once in the shade of a giant gray cactus
Far out on the sands where the burros had packed us,
We met a particularly genial cuss
Who cocked up his head and sat down by us
And gazed us all over from spurs to sombrero,
As cool as a veteran lookout at faro.

If he had any kicks or comments in mind
To expressing the same he was much disinclined;
He was lazy and fat and sat on the sand
As flat and as still as the palm of your hand,
For this genial cuss we had met on our road
Was our very old friend, the desert horned toad.

A most cheerful chap, and when he is sunning
Himself on the sand, he looks mighty cunning
With his mild little eyes looking straight at the sun
He seems to be dreaming of deeds he has done
In far-away antediluvian days
When he swam, a great monster, in bayous and bays
That bordered the edge of the vast Salton Sea
And fought pleiosaurus and killed it maybe!

But, alas, for all dreamers who live in past glories,
They cut little ice in our present-day stories—
For just as our horned toad was dreaming of battles
Up came an old snake with about forty rattles
And before the horned toad in his dreaming had known a
Thing was amiss, he'd gone down like a Jonah!

Now we felt mighty sorry to see him die thus—
For that little horned toad was a genial cuss—
And decided as soon as we'd stowed in our grub
To work on that snake with a four-year-old club;
But before we got ready it was plain for to see
The horned toad and rattler didn't agree.
The latter went bucking and coiling and raring,
His forked tongue a lolling, his eyeballs a flaring,
Till, all of a sudden, he come square in two
And Mr. Horned Toad blinked "How do you do?"
With the little saw teeth on the top of his head
He'd cut through that snake when we thought he was dead.

Now there's many a dreamer's a genial cuss,
Who never begins a row or a fuss
Unless you swallow him, same as snakes do—
When he starts in and calmly cuts you in two.

A LONG WADDLE

A pair of wild ducks recently built their nest on the northern side of the boating pond, in the middle of Central Park, in New York City. That is no place, however, for a mother duck to bring up a family, for on spring and summer afternoons a gasoline launch goes chugging around the lake, and young people paddle boats here and there with splashing oars, and little children play near the water; yet in due time eight timid ducklings appeared.

The little brown mother must have had some terrible fright one spring afternoon. She hastily decided that she would lead her family to the "breeding pond," nearly a mile away, at the lower end of the park. There her ducklings would be safe, for the park authorities have inclosed the water with a fence of wire netting, so that the swans and other varieties of aquatic fowl may rear their young in comparative seclusion.

But the little ducks could not fly, and the entire distance to be traversed was through the most frequented part of the park. Because the journey had to be made on waddling little feet, it called for confidence in man that was appealing and wonderful.

The straggling downy line formed at the margin of the boating pond, and started to waddle across the broad circular esplanade. In the center of this promenade there is a splashing fountain. When the duck and her little ones had reached that point, a crowd of children and men and women began to form; and as the procession continued on its way, the escort grew larger and larger.

When the little brown mother had led the ducklings as far as the great arch beyond the fountain, she confidently piloted them through the ice cream restaurant and past the soda water fountains, where many people sat at tables.

Then came one of the most difficult achievements in the journey. For after the family had passed the restaurant, they encountered two long flights of steps. Up these the bunches of fluffiness, encouraged and urged forward by the mother, fluttered, with many a tumble. At last the line of nine waddlers reached the top of the stairs, and here policemen formed themselves into an escort; henceforth the procession had an official guard of honor.

Beyond the stairway is a park road, on which many automobiles and carriages passed rapidly up and down. These the police halted until the mother had led her family across.

Then came the asphalt paved mall, with countless baby carriages, hundreds of children at play, and donkeys dragging little carloads of girls and boys. Through all this teeming press the police opened a narrow canyon for the trusting little mother and her quacking brood. The crowd jostled behind, but no one offered any hindrance. And all the while it was clearly evident that the wise brown leader knew exactly what she was about, and where she wished to go.

Down the mall the mother quietly waddled, while her babies kept up an excited interchange of quacking comments, and nearly twisted their little heads off in their curiosity at the wonderful sights round them.

When they had safely traversed the long mall, they came to the wide driveway beyond. The mounted police stationed there blew their whistles and waved their arms; and the traffic—carriages, motor cycles, automobiles, and riders—came to a standstill until Mrs. Duck and the eight ducklings were over.

Beyond the last broad drive the mo-

ther led the way into the shrubbery and bushes; and there the little procession, still quacking sociably, left behind the police and children and men and women who had formed their numerous escort. When they reached a bridge over the "breeding pond," still waddling in proper alignment they slipped down to the water; and then off they paddled headed for the tempting seclusion of the farther end.—Youth's Companion.

REFRESHING SUMMER DRINKS

A cool refreshing drink makes the hottest summer day seem if not cool, at least less warm; and there are many kinds of summer drinks besides the well known iced tea and iced coffee. Here are some of the best of them:

Fruit Punch.—Mix together one cup each of water and sugar, boil ten minutes, and skim the syrup carefully. Add one cup of hot, strained tea, one cup of any fruit juice that you prefer, and the juice of five lemons and six oranges. Add sufficient water to make a gallon, and serve it ice cold.

Ginger Ale.—Put one quart of chipped ice into a gallon jug, add one pound of sugar and one tablespoon of strong ginger, and shake the mixture well together. Add one pint of good cider vinegar, and fill the jug with water. Keep it on ice until it is very cold.

Raspberry Vinegar.—Pour two quarts of vinegar over four quarts of raspberries. Cover it, and put it in a cool place for two days. Strain the juice through cheesecloth, and pour it over four quarts of fresh berries. Set the mixture aside again for two days, then strain it a second time through cheesecloth, and add three quarts of sugar. Heat it slowly, and skim the liquid until it is clear; then boil it twenty minutes. Seal it in sterilized bottles. When you serve it, use two tablespoonfuls of the syrup to a glass of ice water. It is a most refreshing drink on a hot day, and will keep for years.

An Egg Drink.—Beat three eggs thoroughly, add six tablespoonfuls of sugar, and one and one-half cupfuls of ice water. Whip into the mixture the juice of one orange and a small amount of the grated rind. Serve it in glasses topped with whipped cream.

Grape Cordial.—To one quart of rich, unsweetened grape juice add one-quarter of a cupful each of cold water and sugar syrup, and one-half of a teaspoonful of grated nutmeg. Just before you serve the drink fill the glasses two-thirds full of crushed ice, and pour the cordial over it.

Currant Shrub.—Heat two quarts of ripe currants and strain the juice through cheesecloth. To every quart of juice add three-quarters of a pound of sugar and stir the syrup until the sugar dissolves. Add the juice of one lemon and enough cold water to dilute the syrup. When it is cold, pour it over cracked ice, and ornament each glass with a slice of lemon or a bunch of ripe currants.

Lemon Mint.—Wash the mint well and pick off a large cupful of the leaves. Put them into a stone jar with one quart of chopped ice. Stir the mixture until the leaves are thoroughly bruised and the flavor is extracted. Strain off the water, and add the juice of two oranges and six lemons, and one pint of sugar. Put it on ice, and when it is thoroughly cold serve it in tall, thin glasses, with a sprig of fresh mint and a very thin slice of lemon in each cup.

Lemonade for a Week.—Boil together two quarts of water and four cupfuls of sugar for ten minutes. Remove the syrup from the fire, and add four and one-half cupfuls of lemon juice. Let the mixture cool, then seal it in glass jars and put it in a cool place. When you want to make lemonade, dilute a little of the syrup with ice water.

Lime Punch.—Put eight cubes of sugar in a bowl and pour over them the juice of two limes and two oranges. Add one and one-half cupfuls of cold water, and when the sugar is melted, chill the syrup with cracked ice. Just before serving it add a slice of pineapple and a few crystallized cherries. The receipt makes only a small amount of punch. For a large company it should be trebled.

Ginger Punch.—To one-third of a pound of preserved ginger add one quart of water and one cupful of sugar, and boil the mixture for fifteen minutes. Let it cool, then add one-half of a cupful of lemon juice and one cupful of orange juice. Strain the syrup through a jelly bag.

Milk Shake.—Flavor rich milk—or, if preferred, half milk and half cream—with vanilla, and add the well-beaten white of one egg and sugar to suit the taste. Put the milk into a screw-top jar or bottle, and shake it until it foams, but not hard or long enough to make it buttery. Pour it into glasses, and sprinkle grated nutmeg on top.—Youth's Companion.

USE LEMON JUICE

Mrs. P. J. Dreher of Pomona urges the more general use of lemon juice by those who care for its delicious flavor in their food. She thinks one of the finest dressings for lettuce leaves and many other salads is the French dressing, made with lemon juice instead of vinegar, using equal parts of olive oil and lemon juice. The juice is expressed and the oil added slowly, beating with an egg beater as in making mayonnaise. Of course one may add salt and other condiments desired.

In addition, Mrs. Dreher finds that adding the juice of one-half a lemon to the water in which green corn is boiled aids in keeping it white and

Cooking Fruit in Syrup

Information of Interest to Women Who Do Their Own Preserving

At this season of the year, when women all over California are either preserving or getting ready to preserve, the following directions for cooking fruit in syrup will prove of special interest:

Wash the fruit and remove imperfections; pare, stone, etc., as necessary. Make a syrup of the boiling water, corn syrup and sugar. Drop in the fruit and cook slowly until soft enough to pierce with a knitting needle. The fruit should be thoroughly sterilized in order that it should keep. Drop fruit into sterilized cans; strain the boiling syrup over the fruit. Insert the handle of a silver spoon between fruit and jar to allow air to escape. Fill jar to overflowing, wipe off rubber ring, fit cap onto jar and seal quickly. Invert jar to be sure that it does not leak.

If these instructions are followed carefully and a good quality of corn syrup is used, the results will be very satisfactory. The best domestic science schools recommend the use of the brand of syrup known as Karo (Crystal White) in preserving. The natural flavor of the fruit is much more apparent, and a heavy syrup is obtained without the cloying sweetness of the all-sugar syrup. Insist upon Karo (Crystal White) and ask your grocer for the little Karo Preserving Booklet.

she thinks it is made more tender and delicious. Use lemon juice instead of vinegar.

TRAVEL BOOKS BY UNCLE SAM

Under the heading "Travel Books by Uncle Sam," the United States Department of Agriculture is entering the realms of exploration and history, much of it, of course, in connection with agriculture, and suggests some very interesting publications which are obtainable from the Superintendent of Documents at Washington rather than the department.

"Geography, Travel, Exploration," is the title of a new free price list just issued by the Superintendent of Documents, Washington, D. C., in which are enumerated many government publications containing information regarding places at home and abroad. Any one of the publications may be had by forwarding a nominal sum covering cost of issue, to the office of the superintendent. Prices range from 3 cents to \$9, most of the sums, however, being less than \$1.

Numerous pamphlets listed in this collection describe different parts of the United States and its territories, geographically, geologically, and historically. Among these are such special pamphlets as:

"Origin of Certain Place Names in the United States." Price, 20c.

"Secret of the Big Trees of California." Price, 5c.

"Reports of the Governor of Arizona." Prices ranging from 5c to 25c each. (These contain information about prehistoric ruins, canyons, climate, resources, etc.)

"Areas of Acquisitions to Territory of United States." Price, 25c.

"Areas of United States, States and Territories" (with map). Price, 10c.

"Old Maps Relating to America." Price (cloth), \$1.50.

"National Reservations for Protection of Wild Life." Price, 5c.

"Aurora Borealis, Its Phenomena and Laws." Price, 70c.

"Icebergs and Their Location in Navigation." Price, 85c.

"Papers Relating to Improvement of Washington, D. C." Price (cloth), \$1.00.

Among Uncle Sam's miscellaneous pamphlets and books dealing with other lands are such as:

"Mediterranean Peoples." Price (cloth), \$1.75.

"Cathedrals of the New World" (North or South America). Price, 25c each.

A number of the publications deal with South American countries and capitals, Panama, Mexico, and the West Indies. Others deal with arctic and antarctic explorations; still others take the reader to strange places in Asia, Africa, or Australia.

Anyone interested in this price list (No. 35), which enumerates these "travelogues," may obtain a copy by sending a postal to the Superintendent of Documents, Washington, D. C. Do not write to the United States Department of Agriculture for this price list or publications listed.

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Mrs. Capron saw old Uncle Timothy starting away on a fishing expedition and, knowing how hard his wife worked, thought it a good time to reprove him for his laziness.

"Timothy," she said, "do you think it's right to leave your wife at the washtub while you pass your time fishing?"

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(California)

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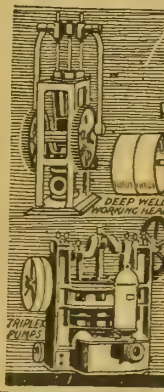



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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, July 28, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts25
Country22@23
Ladle20@21

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
California Fresh14
Cheddar20@21
Domestic Swiss20
Eastern Daisy19
Oregon Triplets15½@16
Eastern Twins16½@17
Longhorn19@19½
Imported Swiss33@35
Tillamook16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts25
Candied27@29
Petaluma—Santa Rosa30
Northern Case Counts25
Northern Fresh Extras25
Other Outside Stock24

Prices to producers:

Hens, lb.11@17
Roosters, old9
Broilers, lb.17
Fryers17
Roasters, lb.17
Turkeys14@16
Ducks12
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7.75
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.8½@9
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head4.75@5.00

POTATOES

Wholesale selling prices:
Idaho Russet2.40
Idaho Rurals1.60
Sweets, lb.3@3½
Northern Burbanks1.10@1.15

ONIONS

Wholesale selling price:
Bermudas, Imperial Val., cr.75
Boiling Onions, crate1.35
Crystal Wax, crate90@95
Local Silverskins, cwt.90@1.00
White Globe, lug50
Garlic10@11

VEGETABLES

Wholesale selling price:
Asparagus, green, lb.10
Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax5
Limas5@6
Green4@4½
Cabbage, sack75
Carrots, doz.30
Cauliflower, doz.1.50
Celery, doz.40@75
Chicory40
Chives, doz.1.25
Corn, lug40
Cucumbers, lug35@40
Egg Plant, lb.5@6
Escarole, doz.40
Horseradish, lb.10
Leeks, doz.40
Lettuce, doz.25
Mint, doz.40
Okra, lb.8@9
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.40
Parsley, doz.15
Peas, Telephone5@5½
Peppers—
Chili, Green5@5½
Bells5@6
Radishes, doz.15
Rhubarb—
Crimson Winter, box75
Strawberry90@1.00
Spinach, doz.15
Squash—
Crookneck, box40
Summer, lug30@35
Tomatoes—
Crate30@35
Lug30@35
Turnips30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders1.40@1.50
White Astrachan, box1.50
Gravensteins1.35@1.75
Crabapples, lug75@80
Apricots, lug50@60
Avocados, doz.4.50
Bananas, lb.4@4½
Berries—
Strawberries, tray75@1.00
Blackberries, tray75
Raspberries, tray80
Loganberries, tray50
Cantaloupes—
Large crates1.25
Tip Top60@75

Casabas, half crate1.50
Cherimoyas, lb.20@25
Currants, crate90@1.00
Figs—
Calimyrna, box1.00@1.25
Black, two layer2.00
Grapes, lb.5@6
Nectarines, lug85
Peaches—
Clings, box30@50
Freestone, lug30@50
George IV, lug90
Foster, lb.2½@3
Pears, Bartlett, box1.65
Plums—
Climax, lug1.00
Damson1.00
Satsuma, lug50@75
Burbank, lug75
Green Gage1.00
Tragedy1.35@1.40
Pineapples, lb.4½@5½
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons1.75@2.50
Juice Lemons1.25
Grapefruit, Seedless2.25@2.75
Limes, basket85
Valencias2.75
Sunkist3.75

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes.7½@8½
Apricots8@16
Nectarines12½
Peaches5@7
Pears, lb.11@12½
Prunes8@12½

NUTS

Prices named by California Walnut Growers' Association are:

No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Peanuts—
California, Raw6
Japan5½
Eastern7½
Rice Corn5.00@5.25

HONEY

Wholesale selling price:
Comb, Fancy, Water White16
White5½@6½
Light Amber4@5
Extracted Water White6½@7
White5½
Light Amber4
Beeswax25

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Producer's price not far from one dollar under these quotations:
Limas5.00
Bayous6.00@7.00
Lady Washington5.25
Pinks4.35
Black Eyes6.75@7.00
Lentils14.00
Small White5.25
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley Hay8.00@10.00
Wheat Hay8.00@10.00
Tame Oat9.00@12.00
Alfalfa8.00@11.00
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.15
Corn, White2.25
Wheat2.05@2.10
Oats, White1.90
Oats, Hulled2.25
Egyptian Corn2.20
Barley Seed1.50
Barley, Hulled1.85
Kafir2.05
Milo1.85
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Bran, Heavy1.90
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.2.20
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Bone, Green1.65@1.75
Charcoal1.90@2.00
Oil Cake Meal2.60
Fish Meal3.15@3.25
Rolled Barley1.45
Middlings2.20
Feed Meal2.25
Scratch Feed2.10@2.40
Oyster Shell1.15@1.25

San Francisco Market

SAN FRANCISCO, July 27, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Extras27
Firsts25½

CHEESE

Wholesaler to retailer.
Oregon, Y. Am.14½
Young America11½@12½
California Flats8@13
Cheddar20
Oregon Twins13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Extras25½
Firsts21½
Select Pullets23½

Price to producer:

Hens, lb.12½@15
Fryers or commission houses22@24
Broilers21@23
Roosters—
Young23@24
Old10@12
Squabs2.25@2.75
Ducks12@15
Geese2.50@3.00
Belgian Hares, lb.6@7

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6¼
Cows and Heifers3@5¼
Calves, lb., live weight6@9¼
Hogs4¼@7¼
Wethers5½@6
Ewes5½@6
Milk Lambs, lb.7¼@8½
Shorn stock, ¼@1c less

POTATOES

Wholesale selling price:
Idaho1.50@1.75
Idaho Russet1.50@1.75
Burbanks, cwt.1.00@1.25
Oregon2.00@2.25
Delta75@1.00
Sweets, lb.5@7

ONIONS

Wholesale selling price:
Onions, cwt.50@75
Bermudas1.00@1.15
Australian Browns75@1.00
White, crate65@85
Wax, crate1.00@1.10
Oregon, cwt.90@1.00
Garlic, new4½

VEGETABLES

Wholesale selling price:
Asparagus, box1.00@1.75
Beans—
String, lb.1@2½
Limas, lb.5@6
Wax, lb.1@1½
Corn, sack75@1.00
Brentwood and Bay1.25@1.50

Cucumbers75@1.25
Eggplant, lug65@90
Lettuce, crate50@1.00
Okra, lug75@1.00
Peas, sack1.25@2.00
Peppers—
Bell, lug75@1.00
Chili, Mexican, lug65@75
Rhubarb75@1.00
Squash, Summer, lug50@75
Cream55@75
Tomatoes—
Southern, crate40@65
Merced, crate20@30
Delta, lug75@1.00

FRESH FRUIT

Wholesale selling price:
Apples—
Alexander75@1.25
Red Astrachan90@1.25
White Astrachan1.00@1.25
Gravenstein1.00@1.25
Apricots, lug65@1.25
Canner's price, ton20.00@25.00
Bananas, Hawaiian, bunch1.25@1.50
Blackberries, chest2.00@3.00
Cantaloupes—
Turlock Ponies1.00@1.15
Southern, crate75@1.00
Turlock Standard1.25@1.50
Delta, lug75
Casabas, lb.1½@2¼
Currants, chest5.50@6.00
Figs, box, single layer, white75
Black, double layer1.25@1.75
Grapes—
Fontainebleau, crate1.00
Thompson Seedless, crate1.25@1.50
Malagas, crate1.25@1.50
Gooseberries, lb.8@10
Huckleberries, lb.12½@15
Loganberries, chest6.00@8.00
Peaches—
Yellow, basket30@50
White, basket35@50
Large, lug65@90
Pears, Bartlett, box1.25@1.40
Other Varieties75@1.25
Canner's ton17.50@25.00
Pineapples, doz.2.00@2.50
Plums, crate35@85
Raspberries, chest7.00@9.00
Strawberries, chest3.50@5.00
Watermelons, doz.1.50@2.50

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.00@3.00
Lemons1.50@3.50
Lemonettes1.00@1.75
Limes, Mexican, case4.00@5.00
Tangerines, halves75@1.75
Valencias2.75@3.50

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼c. All outside sections ¼c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Choice Fancy
Apricots5¼c 6¼c 7¼c 7¼c
Peaches3¼c 3¼c 4 c 4½c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6¼c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7c; 12-oz., 6c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:
Nonpareil16½
I. X. L.14
Ne Plus13
Drakes11½
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6
Italian Chestnuts6½@7

BEANS

Wholesale selling price:
Limas4.40@4.50
Pink3.50@3.60
Black Eyes5.00@5.25
Cranberry4.25@4.50
Small White4.40@4.55
Garbanzos6.50@6.75
Large White4.40@4.55
Bayou4.25@4.50
Manchurian Speckled Bayous.3.60@3.80
Manchurian Butters4.50@4.75
Red Mexican5.40@5.50
Red Kidney5.90@6.00
Horse Beans3.00@3.50

HONEY

Wholesale selling price:
Comb, Water White14@16
Light Amber11@12
Amber10
Extracted White6½@7½
Light Amber3½@4½
Dark Amber25@28
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley8@10

WEATHER CONDITIONS

For Week Ending July 24, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Temperature Data

Stations	Past Week	Seasonal to Date	Normal to Date	Maximum	Minimum
Eureka	.00	.20	.11	80	52
Red Bluff	.00	.00	.00	108	64
Sacramento	.00	.00	.00	102	56
San Francisco	.00	.01	.01	72	52
San Jose	.00	.00	.00	92	48
Fresno	.00	.00	.00	106	66
Independence	.00	.00	.00	98	..
San Luis Obispo	.00	.01	.01	86	54
Los Angeles	.00	.00	.00	88	62
San Diego	.00	.00	.00	82	60

Sonoma-Mendocino11½@13
Oregon Clusters11½@13

HAY

Under date of July 24, Scott, Magner & Miller say:
Arrivals of hay for the week ending today amounted to 4800 tons. New crop has moved more freely during the past week into the market although the main part of our total receipts still consists of old crop hay which continues to come forward on purchases that were made several months ago. The quality of the present crop appears to be much better than last year's output. Exporting in large quantities still continues. One full shipload of 4000 tons has just finished loading and departed for Australia. The sending of large quantities into a foreign market and receiving therefor foreign money to be distributed in California, appears a most advantageous and desirable line of trade for everyone concerned. Prices have been well maintained during the week. The choicer offerings have sold readily, in some instances at figures a little above regular quotations. There appears to be an undercurrent of better feeling in the alfalfa market. The crop has not yielded as was anticipated on account of various conditions. There has been a continually growing demand for manufactured alfalfa products and the large quantities of hay absorbed through these sources diminishes the supply for market purposes.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (14 bales).....	13.50@14.50
No. 1 Wheat or Wheat and Oat.....	11.50@12.50
No. 2 Wheat or Wheat and Oat.....	8.50@10.00
Choice Tame Oat.....	11.00@11.50
Other Tame Oat.....	8.00@10.00
Barley.....	8.00@10.00
Wild Oat.....	6.00@8.00
Alfalfa.....	7.00@10.00
Stock Hay.....	5.00@5.50
Straw.....	4.00@4.50

GRAIN

Alfalfa Seed.....	16½
Wheat, Cal. Club.....	1.75@1.80
Barley Feed.....	1.17½@1.21¼
Barley, Old Crop Feed.....	1.02½@1.05
Corn, Eastern Yellow.....	1.80@1.82
Corn, Egyptian White.....	1.85@1.90
Oats, Red, Feed.....	1.25@1.32½
Oats, White, Feed.....	1.47½@1.50
Millet.....	2½@3½
Flaxseed.....	5@5½
Rye.....	2.00@2.25
Sunflower.....	5@5½

FEED STUFF

Wholesale prices:

Alfalfa Meal, car lots.....	13.50@14.50
Bran, ton.....	27.50@29.00
Feed Cornmeal.....	41.00@42.00
Cracked Corn.....	41.00@42.00
Rolls Barley, ton.....	25.00@26.00
Rolls Oats, ton.....	37.00@37.50
Middlings.....	32.00@34.00
Shorts.....	24.50@29.50
Oilcake Meal.....	36.00@37.50
Cocoanut Oilcake Meal.....	22.00@23.00

Citrus Fruit Market

LOS ANGELES, July 28, 1915.

Valencias are now finding the strongest market of the season. Not much fruit is going forward, but it is being sent as fast as the market will take it and in accordance with the period still left to dispose of the crop. Valencias have a full three months yet before they should be cleaned up, and there are about 2500 carloads left to go.

The lemon situation is somewhat more favorable than it has been, but there are many lemons on hand in this state waiting for favorable weather in the East before it will pay to ship them. 40 to 50 cars are going out daily. Mediterranean lemons are heavy competitors.

Shipments

Shipments of oranges from Southern California to date since November 1, 1915, 30,100 cars, lemons 5264, total 35,364. To same date last season, oranges 33,315, lemons 2403, total 35,718. From Tulare County, oranges 5648, lemons 202, total 5850. To same date last season, oranges 5875, lemons 30, total 5905. From northern counties this season, oranges 630, lemons 2. Last season, oranges 404, lemons 5.

NEW YORK TIMES, July 26.—Ten cars Valencias, two navels, one mixed car, and two cars lemons sold. Market higher on Valencias, unchanged on lemons. Partly cloudy.

VALENCIAS—	Avg.
Glendora Hgts., A. C. G. Ex.....	\$4.80
Poothill, A. C. G. Ex.....	4.15
Evolution, A. C. G. Ex.....	3.95
Golden Beaver, Or. Ex.....	4.30
Saddleback, Or. Ex.....	4.05
Kenilworth, A. H. Ex.....	4.30
Searchlight, Or. Ex.....	3.95
Glendora Home, A. C. G. Ex.....	4.05
Monopole, A. C. G. Ex.....	3.65
Paul Neyron, S. A. Ex.....	4.00

NAVELS—	
Quality.....	\$1.75
Campfire.....	1.50
Cut and Try.....	1.35
Carlo.....	1.45
Orlole.....	1.90

SEEDLINGS—	
Campfire.....	\$1.55
GRAPEFRUIT—	
Carmenita.....	\$2.25

LEMONS—	
Log Cabin.....	\$3.00
Squirrel.....	2.05
Prairie Chicken.....	1.35

PHILADELPHIA, July 26.—Six cars sold. Market strong on Valencias, unchanged on lemons.

VALENCIAS—	Avg.
Wm. Tell, Or. Ex.....	\$4.45
Golden Beaver, Or. Ex.....	4.05
S. S. Brand, Or. Ex.....	3.10
Saddleback, Or. Ex.....	3.55
Golden Beaver, Or. Ex.....	4.10

Southland Beauties, Q. C. Ex.....\$1.65
Justrite.....1.35

ST. LOUIS, July 26.—Five cars sold. Market is strong.

VALENCIAS—	Avg.
Prairie Chicken, A. H. Ex.....	\$3.50
Red Crescent, A. H. Ex.....	3.30
Sespe, F. C. Ex.....	4.00
Cycle, F. C. Ex.....	3.70
Orlole, F. C. Ex.....	3.45

LEMONS—

Pico, S. T. Ex.....	\$2.75
Envoy, Q. C. Ex.....	2.65
Prairie Chicken, A. H. Ex.....	\$2.45

NAVELS—OFF BLOOM

Orlole, F. C. Ex.....\$2.00

CINCINNATI, July 26.—Four cars sold. Market is weaker.

VALENCIAS—	Avg.
Stork, S. A. Ex.....	\$3.90
King, S. A. Ex.....	3.65
Red Shield, A. C. G. Ex.....	3.90
Green Crown, A. C. G. Ex.....	3.70

LEMONS—

Hawk, S. A. Ex.....	\$1.00
Lemonade, Or. Ex.....	1.95

BOSTON, July 26.—Nine cars sold. Market strong on both Valencias and lemons.

VALENCIAS—	Avg.
Orchard, National O. Co.....	\$3.95
Standard, National O. Co.....	3.45
Peasant, A. H. Ex.....	3.80
Colombo, S. T. Ex.....	2.90

LEMONS—

Squirrel, A. H. Ex.....	\$2.30
Prairie Chicken.....	2.00
Trail, A. C. G. Ex.....	2.45
Red Hill, Or. Ex.....	3.05
Purity, Or. Ex.....	2.55

VALENCIAS—HALVES

Kenilworth.....	\$1.85
GRAPEFRUIT—HALVES	
Orchard.....	\$1.80
Carmenita.....	\$2.10

PITTSBURGH, July 26.—Seven cars sold. Market is strong on oranges, unchanged on lemons.

VALENCIAS—	Avg.
Orchard, National O. Co.....	\$4.25
Standard, Or. Ex.....	3.95
Reliable, S. T. Ex.....	3.45
Iris, D. M. Ex.....	4.55
Violet, D. M. Ex.....	4.30
Peasant, A. H. Ex.....	4.00
Dandy, A. H. Ex.....	3.50

LEMONS—

Liberty, E. F. G.....	\$2.85
El Dorado.....	2.65
Evergreen, Or. Ex.....	2.65
California, A. C. G. Ex.....	2.65
Green Crown.....	2.65

NAVELS—

Dandy.....	\$1.15
------------	--------

CLEVELAND, July 26.—Four cars sold. Market is strong.

VALENCIAS—	Avg.
Altura, S. B. Ex.....	\$4.20
Tango, S. B. Ex.....	3.50
Viking, S. B. Ex.....	4.10
Quail, O. K. Ex.....	3.95
Coyote, O. K. Ex.....	2.85
Owl, O. K. Ex.....	3.40

LEMONS—

Luster, Or. Ex.....	\$2.80
Reflection.....	2.10
Questa, Q. C. Ex.....	1.65
Corona Beauty (shipped from storage, Columbus).....	.90

KANSAS CITY, July 26.—Cloudy. Attendance good.

LEMONS—

240s, \$1.70; 270s, \$1.75; 300s, \$1.30; 260s, \$1.30; average, \$2.03.
--

CHICAGO, July 26.—Apples, new, barrels, 50@3.00. Cherries, cases, 16 quarts, 65@1.75. Currants, cases, 32 quarts, 1.25@2.25. Lemons, cases, 300 and 360 count, 1.75@2.75. Oranges, boxes, California, 3.75@4.25. Pineapples, crates, 24 and 36, 1.90@2.25. Peaches, six baskets, 75@1.35. Plums, cases, 24 quarts, 75. Pears, six baskets, 1.15@1.25. Blueberries, 16 quarts, 1.50@2.75. Blackberries, cases, 24 quarts, 1.75@2.00. Gooseberries, 16 quarts, 90@1.25. Red raspberries, 24 pints, 1.25@2.00. Black raspberries, 24 pints, 1.00@1.35. Cantaloupes, standard crates, 1.00@2.50. Watermelons, per car, 100.00@200.00.

A TORRENS TITLE

(Continued from Page 106)

your duplicate, "I hereby grant to—the property described herein. Witness my hand and seal." Sign it, acknowledge your signature before a notary, hand the certificate to the new owner, and he hands you the money. This transfers your interest in the land, just as when you indorse a check you transfer your interest in it. To get a title the buyer hands the old certificate to the registrar and gets a new one for which he pays one dollar. The owner of the land pays nothing. Or the buyer and seller may go together, look at the record where all claims are entered, give up the old certificate and get the new one. Every lien, attachment, assessment, etc., except taxes, that is good against the land is shown on that one page.

Mortgaging

A signed and acknowledged mortgage and the duplicate certificate are handed to the registrar. He compares the signatures on the mortgage and his receipt. If he is satisfied that you have the right to make the mortgage, he makes three entries, one on your certificate, one in his register and one on the original certificate that he has. He puts the mortgage in his file and collects 50 cents. To extend a mortgage the cost and process are similar. To release a mortgage, the entries are made in red ink; the cost is 25 cents.

Anyone buying the land buys it upon the word of the state that it is yours. A person lending money on your title lends money upon the state's word that the land is yours. The property can not be taken from under that claim until it is satisfied.

A Torrens title means absolute security for loans; certainty of ownership; cuts off recording, escrow, and certificate of title costs; avoids the expense for deeds; certificate never grows old; claims all recorded on one page that is easily found; deals can be closed in an hour at very small expense; no continuous expense for transfer; protection against fraud.

Without all the facts about a piece of property, it is not possible to tell exactly what a Torrens title will cost. A rough general estimate including every expense that will apply to almost any property is \$20 to \$50. Lack of space has compelled the omission of details, but questions addressed to the Cultivator will have prompt reply.

FUMIGATION SCHOOL PROGRAM

The school of fumigation referred to on page 101 of this issue will be held in the high school building at Pomona, August 9 to 13. Prof. C. W. Woodworth who is in charge of the school writes:

"Special features of the course include the experimental study of cyanid injury, both in the laboratory and orchard, beginning Monday afternoon and continuing under observation till the final discussion Friday morning. On three evenings after the lecture a trip will be made to a citrus orchard to study fumigation practice. On three mornings the exercises will begin with a lecture on scale insects and the afternoons with a lecture on fumigation chemicals. Very full study of tent material and leakage and of gas generation and properties will also be given prominence."

Monday, August 9, afternoon—Introductory lecture illustrated with lantern slides showing the early practice of fumigation; lecture and discussion on the theory of cyanid injury; laboratory experiments with oranges and foliage to determine the cause of injury. Evening—Lecture and experiments on methods of generation of cyanid gas; orchard experiments with excessive doses.

Tuesday, August 10, morning—Lecture—The hatching and distribution of young scale insects; lecture and experiments illustrating physical properties of cyanid gas. Afternoon—Lecture—The manufacture of sodium cyanid; lecture, the theory of leakage testing; practice in the use of the leakage tester, comparing various tent materials and the effects of moisture. Evening—Lecture—The marking and measurement of tents; orchard practice in measuring and the comparison of methods; comparison of machine and pot generation.

Wednesday, August 11, morning—Lecture—The nature of scale insect injury; lecture, the methods of tent calculation; practice in the calculation of tent volume, area, etc. Afternoon—Lecture—The manufacture of sulfuric acid; lecture, the history and comparison of dosage systems; lecture, the uniformity of machine generation; exhibition of the construction of a fumigation machine. Evening—Lecture—The construction of dosage tables; orchard practice in the use of dosage tables.

Thursday, August 12, morning—Lecture—The species of scale insects; lecture, the relation of weave to tightness and strength of tent material; practice in testing weave, tightness and strength of tent materials. Afternoon—Lecture—Physical and chemical qualities of cyanid and acid; lecture, the initial dose in machine fumigation; experimental demonstration of the physiological action of cyanid. Evening—Lecture—Absorption of cyanid by the soil, with experimental demonstration; round table discussion and social evening.

Friday, August 13, morning—Final discussion on fumigation injury with an exhibition of the results of experiments.

One of the biggest attractions of the zone is said to be the Panama Canal. By this wonderful reproduction of the waterway which connects the Atlantic and Pacific Oceans, covering five acres of ground, with the topography of the country accurately laid out in accordance with the original plans of the Panama Canal Zone, together with a panorama of the country and the two oceans, the spectator has brought to his vision over 5000 square miles of land and water, and it is an inspiring and interesting sight to see a ship travel apparently under its own power from the Pacific to the Atlantic Ocean, being lifted into the locks and sailing majestically through the water without a hitch or stop.

I. H. C. EXHIBITS

There are many wonderful things at both the Panama-Pacific and Panama-California Expositions. One of the most instructive and wonderful of all these is that of the International Harvester Company. At both expositions this company's exhibits are most astonishing because of their magnitude and beauty.

At San Francisco the display is in the Agricultural Building. At San Diego the company has constructed its own building at the rear of which is an orchard and large demonstration ground in which tractors, trucks and other power machines are given a thorough demonstration. The farmer has opportunity to learn much at either of these great exhibits.

The company has just issued a booklet of 63 pages, which gives a most excellent idea of its exhibits. We doubt not the visitor to these exhibits may have this booklet for the asking.

One of the most complete and best illustrated books on barn plans and equipment received at this office is from the Loudon Machinery Co. This book contains 112 pages with half-tone illustrations and plans of various size barns from a small combination barn for three horses and three cows to the larger dairy barn. Besides illustrations and plans of barns it contains much valuable information that every rancher ought to have. It will be mailed free to readers of the California Cultivator who write to Loudon Machinery Co., 510 Bruce St., Fairfield, Iowa.

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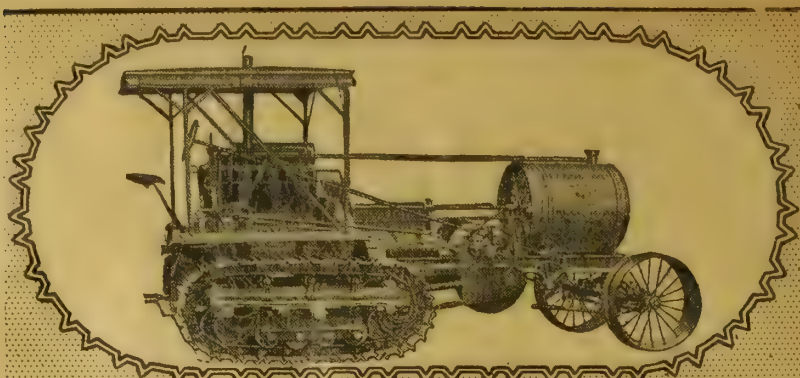
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LOS ANGELES

August 5, 1915

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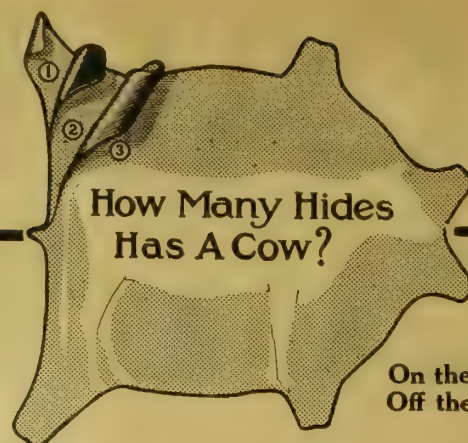
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Vol. XLV No. 6

LOS ANGELES: THURSDAY, AUGUST 5, 1915

One Dollar Yearly

Fruit Growers Convention

Pears, Potatoes and Pessimism Leading Factors at 46th State Convention Gathering in Leland Stanford, Jr., University. Largest Ever in Attendance of Great Men in Agricultural Science and Research and Smallest Ever in Attendance of Fruit Growers

THE forty-sixth State Fruit Growers' Convention is ended. David Starr Jordan gave hearty welcome and said "All of Leland Stanford, Jr. University is yours; accept it, but don't take it away."

It has been a convention of the expert, the specialist, the scientist. It has not been a convention of the farmer nor the orchardist. For some reason he did not understand the feast in store here, or else the big crop of fruit kept him at home, or else the price of fruit, which is not "big," was a determining factor. Whatever the reason, there was never such a program offered to so few hearers.

In the discussion of the outlook for various fruits Mr. Swett remarked that as the addresses had been a symposium of pessimism he would join in to show wherein the grape industry was in line with other fruits.

Mr. Neff's review of the walnut situation, given in last week's Cultivator, was perhaps the most optimistic of any, though each review found a ray of hope—providing Europe would adopt the safety first slogan, providing growers would produce finer fruit more cheaply, providing marketing conditions would improve so that the producers would receive rather more than one-fourth of the consumer's dollar, providing also that many other conditions would change.

But it wasn't as discouraging as the above sounds, for it wasn't so much a discouraged note as a must-do-different note. We must understand our soils better; we must handle them so as to produce maximum returns; we must use more fertilizers. California uses only about 50,000 tons of commercial fertilizer. Dr. Lipman of New Jersey told us his little state uses over 200,000 tons. Instead of producing 30 or 40 sacks of spuds on an acre we must use California soil, California water, its climate, its fertilizer, and more, the highest intelligence of its producers, till we produce 100—200—yes, 300 sacks per acre.

"But why produce more? Our prices are nil for what we produce now. We are ruined by our production of a quantity which our markets won't take." And so the marketing question would come up. In season, out of season, "teach us to cooperate or do something to save ourselves."

Mr. Johnson of the Farmers' Union spoke most sensibly of the failure of so many farmers to grasp the true meaning of co-operation and of the danger of becoming discouraged too quickly when success does not come as expected. Cooperation is a matter of slow education. It must come, it is coming, it even has come—and successfully—in many cases. It will be more general. But a general consideration of the topic was deferred till the next convention, which will be at Visalia, Tulare County.

In announcing the next meeting Commissioner Cook said that the two topics to be given greatest prominence at the next meeting would be cooperative marketing and the use of the tractor in orcharding and farming.

I trust our readers will consider how impossible it is to attend such a convention, beginning Monday morning and lasting till Saturday night, much of the time two meetings in session at one time, and write any report which will give a correct idea of the entire convention—much less of all the lessons brought out. I may at best give only hints of the lessons. As Mrs. Hoppin would express it, the greatest feature of such a convention is "the being with those who think great thoughts and do great things."

One lesson: Prof. Reimers of the Oregon station talked of the sulphur fertilizer theory. He and his station force have been experimenting with the use of sulphur as a fertilizer. Applied to alfalfa (which showed 40 to 50 per cent increase) and some other crops, the proof of its value is conclusive. The value of superphosphate has been shown to come largely from the sulphur content of the sulphuric acid used in making available the phosphorus of the rock or bone. I cannot enlarge upon this, but our readers will later be given more (it has already been touched upon in our columns) in a later number. Meantime keep your eyes open for other new things.

Prof. I. P. Roberts' lesson to the convention! "We must have reserve power. The farmer needs a reserve as much as does the banker. If he doesn't have the reserve he is on dangerous ground."

Chemist E. M. Chase of the United States Department of Agriculture: "Usually better oranges are produced on the hillside or higher land—but an orchard on low valley land which is given good care will produce far better fruit than a similar orchard poorly cared for on higher, more favorably situated land."

The resolution committee reported:

Resolutions

The forty-sixth State Fruit Growers' Convention of California, held at Stanford University, in surroundings of singular attractiveness and convenience, hereby adopts the following resolutions:

That we acknowledge with strong appreciation the liberal and active kindness of Dr. Jordan and his associate officers who have extended to us the privileges of their remarkable location and great equipment, so largely and with such an offering of spacious ease and beauty that to have met here is in itself an experience to be remembered.

That our thanks are due to the Chamber of Commerce of Palo Alto for their hospitality and the entertainment of our members, to whom the city and its delightful surroundings have been thrown open as to welcome visitors.

That to the committee of arrangements and all who have joined to secure the program of our meetings and their successful conduct we offer also our hearty acknowledgements.

That the attendance of horticultural advisers from sister states, who have come in a spirit of free helpfulness to contribute to our enlightenment from the results of their earnest investigations and well-considered experience, is appreciated by us as a



L. O. Howard, Chief Bureau of Entomology, U.S.D.A.
F. C. Reimer, Superintendent Southern Oregon Experiment Station, Talent, Oregon.
C. P. Gillette, Colorado Agricultural College, and E. H. Ehrhorn, Territorial Entomologist, Honolulu.
J. W. Craig and J. W. Garthwaite, olive and lemon growers, Corona.
Arthur Dunn, Geo. H. Hecke and Frank B. McKevitt, of the Farmers' Protective League.



Dean Van Norman of the Davis School and Dr. Webster of the Citrus Experiment Station
Reporter getting Mrs. Neilson's story; Miss Clarke by column, and Eugene Grubb
Guy H. Miller and Carlyle Thorpe, members of committee on Agricultural Federation.
D. L. Crawford, botanist Pomona College, and A. L. Wisker, Grass Valley.
Commissioner Harry Stabler, B. B. Meek and O. C. Perry, both of Butte County.



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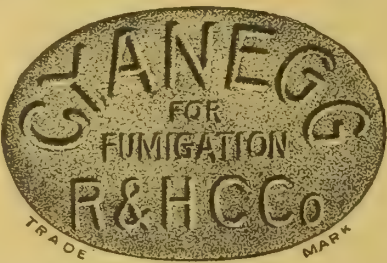
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service of singular quality; and that we recognize also our obligation to our state university authorities, to the county commissioners who have taken part in our meetings and also to the several fruit growers who have offered for our consideration their views and the records of their activities. From all these sources we have drawn material which should help in our horticultural progress through the coming year.

That we have reached a period where we may reflect with satisfaction and with a strong confidence on the alliance which has already been formed between the working fruit growers of California and the well-trained scientific students who are always at hand to help them through their difficulties. Through this connection we have built up a faith that nothing can permanently stop our forward movement. Our university, our horticultural commission, the far-extended arm of the department of agriculture, are agencies on which we rely continually and with appreciation, and scattered over all our territory are private investigators quietly making their own experiments and holding the results at the service of all who choose to profit by them. We have arranged that a liberal intelligence shall always be an intimate partner in our industry and in that arrangement we have provided the best possible insurance.

The rapid development of cooperative marketing of orchard products has passed the need of argument in its support. We all know that it is only by these methods, steadily and intelligently applied, that there can be any large and continued success in any of our industries. We recommend therefore that whatever branches of fruit growing are behindhand in the formation of strong and workable associations make vigorous efforts to secure themselves and to prove a capacity for accommodation and restraint as well as persistent purpose. As our various organizations become more thoroughly established, we may look forward to some form of union that may include all sections of the industry and may by its combined strength be able to attack problems too large for minor effort.

As a matter of some moment, especially as regards the enterprise of newcomers to the state, we note the desirability of an attempt to confine large plantings to varieties well proven in the way of commercial success. Much loss is occasioned by a willingness to plant trees on recommendations whose authority has not been scrutinized.—E. S. Thacher, D. D. Sharp, K. S. Knowlton, A. L. Wisker, T. O. Morrison, John Vallance.

One resolution which failed of endorsement by the committee was presented by Edward Berwick. It was:

Whereas war both kills off our customers and necessarily results ultimately in decreased commerce; be it

Resolved that this convention expresses hereby its hope that President Wilson will continue his pacific policy so nobly begun and refuse to be drawn into war by jingoistic journalists, panic-mongers, scare-breeders, armament syndicates or any others, who for personal profit are striving to embroil the United States in the bloody conflict that is turning Europe into a slaughter pen.

Members refused to be classed with jingoistic panic mongers or under any term which might be construed as favoring a peace-at-any-price policy.

Potato Growers' Resolution

The potato growers are seriously

concerned at the many problems which are before them. These problems are shown by their resolutions:

Resolved, that the damage to the potato industry by tuber moth has been overestimated, and that, while we consider it a pest which should not be carelessly introduced into new localities, yet the damage from introduction after careful inspection of potatoes is slight and its injury if introduced into northern states is problematical.

Second, that a committee be appointed to collect and prepare disseminating information regarding injury caused by tuber moth and danger of its spread and the injury which is likely to result by its introduction into other sections of the state.

Third, that the convention request that the state commission of horticulture order the inspection for tuber moth and eelworm of all potatoes designed for shipment to other states from San Joaquin, Sacramento, Contra Costa, Alameda, Monterey, Los Angeles and other counties he may deem wise to include.

Fourth, that the convention favors the inspection for tuber moth and eelworm of potatoes intended for seed purposes.

Fifth, that the convention strongly endorses the movement for better seed potatoes and heartily approves the system inaugurated by the California certified seed bill.

Sixth, whereas, there is great necessity for establishing and maintaining experimental work to determine where and how good seed potatoes can be produced, the relative value of such seed, and also the best practices to be followed in seed selection, fertilization, cultural methods, irrigation, crop rotations, in overcoming potato diseases and insect pests.

Therefore, we resolve that concerted effort be made to raise sufficient funds to establish and maintain this work, and that a committee be appointed by the president to secure the financial aid necessary for this work.

The pear growers did not "resolve," but with blight destroying the bearing trees of the state with fearful rapidity it is realized that "something must be done." That something is being done in some orchards—or one at least as was shown by the report of Percy Gammon who is managing his father's large property at Sacramento.—In his orchard great profit was secured by thorough cutting with disinfected tools at a cost of 30 cents per tree per year.

Dr. Cook, Deputy Weldon, Secretary Vosler, together with university people and orchardists of this state and other states worked hard to produce the program. It was an excellent one, and while few were present to be inspired by it, through the Cultivator and other papers much of the good material will be passed on.

One pleasure of the convention can not be passed. That pleasure was given to us by Prof. R. M. Alden in his organ recitals in the wonderfully beautiful memorial chapel. This structure cost not far from \$1,200,000 and was almost wholly destroyed by the '06 earthquake. Its restoration, which is not yet completed, has already cost over \$800,000 and its walls of mosaic and its art windows are all sermons. Each afternoon at 5 o'clock in honor of the convention Prof. Alden presided at the organ.—C. B. M.

* * *

Following are three of the papers presented at the convention. Others will be given in later issues:

Advertisements in California Cultivator are Guaranteed See Announcement at Head of Editorial Page

BLIGHT RESISTANT ROOTS

By A. L. Wisker

California's experience with pear blight, *Bacillus amylovorus*, during the past two years has again emphasized the relative inability of orchardists generally to control this most serious of all diseases to which the pear is subject, and once more compels attention to the imperative need of adopting every measure that tends toward its suppression.

When a single grower suffers a loss of \$25,000 from blight in one season argument is unnecessary to show that the situation is serious, particularly in view of the fact that California's pear industry, according to the last census, produced more money than that of any other state in the Union, notwithstanding the fact that her nearest rival, New York, had 50 per cent more bearing trees and in total number had just twice as many as California. Michigan is close behind this state in number of bearing trees and in total number, but the value of her crop was less than one-third the value of ours.

State	Bearing trees	Total No.	Bushels—1910	Value
California	1,410,905	1,808,998	1,928,097	\$1,660,963
New York	2,141,596	3,644,251	1,343,089	1,418,218
Michigan	1,136,151	1,760,082	666,023	535,771

The statistics of the industry for the three states are as follows:

Collectively these states produce nearly half the pears of the entire nation.

Assuredly these figures warrant the assertion that if it pays to fight pear-blight in any part of the country it will pay doubly well to do so here where the industry is more profitable than in either of the other states where production approaches that of California.

The absolute eradication of pear blight cannot be hoped for, but blight control is a reasonable and practical expectation. Splendid work is now being done by scientific and practical investigators in the study of both preventive and remedial measures. The first named appear to be of greatest promise, and much research work is in progress to discover and to breed varieties of high quality which shall be strongly blight resistant in root, in trunk and in branch. It is along this line that eventual deliverance from blight will be found, but some years must elapse before horticulture can reap the benefit of the work now in hand. In the meantime blight problems will continue to arise, and it is the purpose of this paper to particularly deal with our present knowledge of blight-resistant roots, since the elimination of blight in the underground parts of trees must ever remain the first and most important step toward pear blight control.

Probably 80 per cent of all pear trees grown in the United States are either budded or grafted on seedlings of *pyrus communis*, the wild pear of Europe, commonly called by nurserymen the French pear. This is the ideal root for the nurseryman since it has perfect affinity for all the commercial varieties, is satisfactory to "work," and if propagation is done by budding a high percentage of buds "take" if the work is properly done.

However, from the standpoint of the orchardist it has three serious faults, it root-suckers profusely from plow injuries, is subject to great injury from the root aphid, and is particularly susceptible to the bacteria of pear blight, more so, in fact, than any other root used in pear propagation. For these reasons securing a satisfactory substitute becomes a matter of great importance.

It is known that the pear can be grown on seedlings of the hawthorn and the mountain ash, yet very few have been thus propagated and little is known of the behavior of trees thus produced. However, Dr. Bailey states that good dwarfs can be grown on the thorn and that there is reason to believe that some of the thorns will be preferable to quince stocks for dwarf pears in severe climates, while the mountain ash has been used where the soil is excessively sandy and is believed to be fairly resistant to blight.

The pear may also be grown on apple roots. In such cases the root is somewhat blight resistant but the tree is short-lived and apparently no advantage is to be found in this direction. No satisfactory pear orchards have been produced on the apple, although top-worked trees sometimes bear well for a few years. At Colfax, in this state, such a tree has borne extra fine fruit for the past five years and is still thrifty.

The affinity of some varieties of pears for the quince is well known,

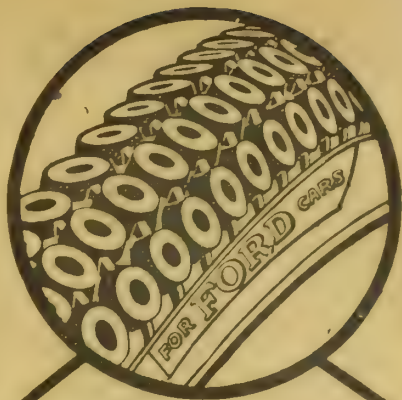
and orchards of the dwarf trees thus produced are of commercial importance in some parts of the country. In the production of such trees the pear is budded on rooted quince cuttings. This root is considerably more blight-resistant than the French pear and is probably the best root to use in rich soil that is excessively moist. While dwarf pears are not in general favor in California, it is quite probable that under certain conditions they are much to be preferred to standard trees. Stephen Harmeling, a successful grower of Washington, maintains that under suitable conditions they are more profitable, and it is conceded that they are infinitely easier to inspect and prune if an outbreak of blight occurs in the orchard. Many varieties must be double worked when grown on quince, thus increasing cost of trees, but the fact that dwarf pears bear young and yield heavily, with an improvement in quality and shape for

certain varieties, together with a measurable degree of blight resistance, entitles the quince root to more consideration than it has yet received in California.

Rooted cuttings of the European-Asiatic hybrid pears, such as Kieffer, LeConte, Garber and Smith have been used to a limited extent but results have been generally negative. Kieffer is most promising of those named. LeConte cuttings were advocated several years since by a few California horticulturists. Of LeConte Prof. Waite says, "It was used in general commercial propagation in the southeastern states. It has not, however, proved particularly suitable. Bartlett orchards * * * on these rooted cuttings have gone down with the blight very seriously in Virginia and Maryland." Personally I have little confidence in rooted cuttings of these hybrids, but think there is a most hopeful field for experiment in testing rooted cuttings of certain varieties of European blood that have shown practically complete immunity to blight.

We have now to consider the root that in the present state of our knowledge appears to present the greatest combination of advantages of any of the roots having blight-resistant qualities, the Japan pear, *pyrus sinensis*, the wild pear of Asia. Some nurserymen untruthfully refer to this root as "blight proof;" it is not, but it is strongly blight resistant. There is no blight proof root thus far known to horticulture.

The use of this root extends over a relatively short period, and it is a matter of regret that we have no authoritative literature bearing upon the subject in a broad way, and no knowledge of any scientific observations extending over a period sufficient to warrant our arriving at wholly definite conclusions. Because no such analytical study of the subject is available I have been compelled to weigh the opinions of numerous observers, both scientific and practical, and to interpret them in the light of my own personal experience, which in itself is too limited to allow me to reach positive convictions. On most points the views of the various scientific observers harmonize and



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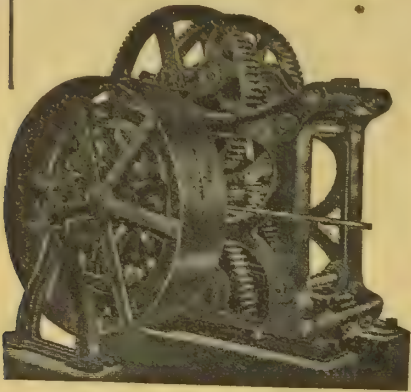
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the following seem to be generally accepted as facts:

The Japan seedling is of vigorous habit, frequently making more thrifty growth than the French. (Prof. Waite believes the Asiatic pear and its hybrids make better growth in the East than on the Pacific Coast.)

Japan seedlings in the nursery are much less subject to fungus leaf-blight (*Entomosporium maculatum*) than French. Watson, the great seedling nurseryman, states that French seedlings will sometimes be completely defoliated by this disease when adjacent rows of Japan show no sign of infection and suffer no impairment of vigor.

Japan roots have but little tendency to sucker. French roots sucker readily from plow injury, and blight infection of such suckers speedily reaches the main roots of the tree.

The pear root aphid, the most serious insect enemy of the tree when grown on French roots, does comparatively little injury to the Japan root.

While Japan seedlings vary in their resistance to blight, as do the French, and show different degrees of resistance in different parts of the country, their average resistance is much greater than any other root now in use.

The Japan root will make satisfactory growth with less soil moisture than the French. It should, therefore, prove particularly valuable in all irrigated districts, especially throughout the foothill section, and in all dry soils. Important districts in Nevada and Placer Counties that have to pay high water rates, and certain districts that have no irrigation facilities, should adopt this root exclusively, since it not only is adapted to their dryer soils but is strongly resistant to their worst insect pest, the root louse, which in some localities is more to be feared than blight. This root is better adapted to dry, warm climates than the French, but its behavior in extremely severe northern climates is yet to be learned.

It will take several years of experimental work to conclusively determine these points. In our nursery at Grass Valley we have only worked Anjou, Bartlett, Comice and Forelle on Japan stocks, but our stand was satisfactory when the work was carefully done. In our work with the varieties mentioned it seems that Anjou has not "taken" quite as readily as the others, but that may be due to some other cause not determined.

Where the bud "takes" at all we find the union to be perfect and in every sense satisfactory. However, a Newcastle nursery is said to have had difficulty in getting a satisfactory union, but that is a point upon which all nurserymen who replied to the question claim to have had no difficulty. Mr. Barnicott of Newcastle strongly endorses the Japan root after several years use in his nursery work, but California nurserymen generally have grown relatively few Japan-root trees. Oregon nurserymen use Japan roots very largely, and this stock is also in favor in Washington.

The Japan root probably has one serious disadvantage; under conditions of excessive soil saturation it may be injured by root rot. If pear orchards on blight resistant roots are desired in such soils it may be best to grow dwarf pears on quince roots. Notwithstanding this one disadvantage of Japan, and the fact that it may be a little more expensive to the nurseryman to propagate trees on this root, we have discarded the French root entirely in our nursery. We be-

lieve the French root must go because of its many evil qualities. If more complete acquaintance with the Japan root should prove that it has serious faults, the next step in the direction of blight resistant roots will be the propagation of trees on rooted cuttings of certain varieties of *pyrus communis* blood that have shown wonderful immunity to blight. It will probably take ten years of experiment to bring about this substitution. But the orchardist of the present may feel positive assurance that the day of blight resistant roots is now at hand and may at least safeguard his orchard to this extent.

Grateful acknowledgement is made to Dr. Taylor, Prof. Waite, Prof. Gould, Prof. Lewis, Prof. O'Gara, Prof. Hedrick and Prof. Reimer, all of whom have generously given information that has been of material assistance in the preparation of this paper.

* * *

THE OUTLOOK FOR THE LEMON

By G. W. Hosford, Manager San Dimas Lemon Association

According to the data assembled by the Citrus Protective League, the total acreage of lemon trees in California is about 32,000. Of this acreage over one-half is not in bearing, and assum-



Some of the Old Guard who have attended Conventions for 20 or more years. From left to right: Messrs. Hecke, Walton, Boalt, Nordyke, Ehrhorn, Stabler, Cutter

ing that the old groves should continue their present production and that the young groves produce as heavily, we shall be producing within eight or ten years more lemons than are at present consumed in this country. In the past few years California has produced about one-half the total amount used in the United States. The balance has been imported from Italy and mostly from the Island of Sicily.

Under the reduced tariff presented to us by the present administration we have found the competition with Sicilian lemons very hard to meet in the Eastern markets. This country has been considered by the Italians their best lemon market, it having used on an average about 25 per cent of the entire Italian production. Under the cheap labor conditions of Italy and the smaller transportation charges to the Atlantic seaboard the Italians can pay the present tariff and still grow lemons at a profit when the California grower is producing at a loss.

It will be seen, therefore, that the elimination of the imported lemon and replacing it with the California article, can be accomplished only by a stiff fight. There is no doubt that this condition must be met during the next few years and overcome in order to market the increased crop which the large amount of young acreage promises.

The California lemon growers are alive to the situation and have already taken steps to meet the conditions which are confronting them. A large proportion of the lemons are handled through the selling facilities of the California Fruit Growers' Exchange. Practically all of the large shippers of

lemons have availed themselves of the superior facilities for marketing fruit through this organization. The exchange has been working for several years on an extensive advertising campaign for both oranges and lemons. During the coming year for the first time, a national campaign will be inaugurated to increase the sale and use of lemons. The results already obtained in the advertising of Sunkist brands have been very satisfactory. The growers have every reason to feel confident that the advertising of Sunkist lemons will help very materially in the handling of the increased output.

Quality

With the lemon as with every other fruit the reputation for superior quality is a great asset in its marketing. During the past ten years the California lemon has been making steady progress in the markets of the country until it has secured an enviable reputation, not only for honest, uniform pack but also for keeping quality. In the Western markets where the better grades of California lemons have been largely marketed up to this time, this is universally true. In the Eastern auction markets where the poorer grades of California lemons have been marketed in competition with the imported lemons, progress has been slower. Nevertheless in the New York market, the home of the imported lemon, California lemons have consistently averaged higher during the past two years than the foreign lemon.

One of the big problems before the California lemon grower is that of producing and handling a lemon of superior quality on an average to that which has as yet been marketed. These problems are all receiving close attention by the state experiment station, and the growers are very quick to avail themselves of all information which may be obtained through this or other means. Investigations carried on through several years by the United States department of agriculture in the handling of lemons have pointed out to the growers that a great many difficulties may be overcome by careful handling. There are few fruits which are more easily injured or in which decay follows so inevitably the mechanical injury to the skin as in the lemon.

By-Products

Until the present time there has been no satisfactory by-product industry in the lemon business of California. Several factories have been started by private capital that have been more or less unstable. The growers have this year organized a cooperative undertaking for the purpose of utilizing lemon culls in the manufacture of by-products, particularly citric acid and lemon oil. These two products are staples which have a merchandizing value and a world market. New methods of manufacturing have been devised which make it possible to replace with machinery the cheap hand labor of Italy, and which give promise of making a profitable business. Where successful the benefits which may be derived through this move will be two-fold: First, in utilizing a waste product and bringing a small net return where there was previously none, and second in utilizing the low grade, the poor keeping fruit, and thus materially strengthening the reputation of the fruit which is shipped. The United States market for citric acid and lemon oil alone would utilize a considerable portion

of the fresh lemons produced in California.

Improved Varieties

The work of Mr. A. D. Shamel of the United States department of agriculture has called the attention of the lemon growers, as well as the orange growers, to the fact that the present varieties of citrus fruit may be greatly improved, both in quality and quantity of production through the selection of individual trees possessing these superior attributes. In the same groves trees are found which produce about one-fifth of the quantity of fruit of a very inferior quality, alongside of trees, which have been propagated under the same variety names, which produce five times as much fruit of a very superior quality. Already there is a ready market for trees propagated from trees having authentic records of high productivity. Some very careful work has been done along this line, both by the growers and by nurserymen, to secure accurate records of the production of all the trees of some groves. There is already considerable interest at the present time in the budding over of some of the unprofitable trees with buds from these trees of proven merit. While the improvement of the quality of the fruit shipped from California, through this means, will be gradual, it cannot help but produce a very permanent improvement in the quality and in the reputation of the output of the state.

Conclusion

With increased quality and production through better methods of culture and through the selection of improved strains of our present varieties; with the utilization of the waste culls for by-product purposes and the consequent improvement in the quality of the fruit which is shipped; with improved methods of handling and preparing for market, and with the wider advertising, the cumulative results in the advertising already done by the California Fruit Growers' Exchange, the progressive lemon grower of California feels that he can meet the competition with foreign fruit and still produce lemons at a profit in the years to come.

THE FUTURE OF THE ALMOND IN CALIFORNIA

By George W. Pierce, President California Almond Growers' Exchange

Accepting as an established fact the ability of California to actually produce almonds, the future of the industry in the state depends upon the ability of the orchardist to market the product at a sufficiently remunerative price. If the crop cannot be sold at a reasonable profit its decline is certain. There is little satisfaction, save to the "gentleman farmer," in knowing that one can produce any given crop unless he is assured that he can dispose of it at a price that will leave him a fair profit.

Vexing as are many of the problems that present themselves to the grower, the greatest of these is the marketing of the output. The extension of almond growing in California rests rather on a commercial than on a horticultural basis.

The market for California almonds up to the present time has been confined to the demand from the United States. The annual consumption in America amounts to about 6000 tons in the shell and about 5000 tons of shelled goods, or expressing the shelled in terms of the unshelled, we find the consumption to be annually about 16,000 tons.

There are two sources of supply to meet America's demand for almonds. These are California and Southern Europe. The two are in direct competition. Each is seeking the American trade. There is but one market, and it goes without saying that the section that can acceptably supply that market at the lowest cost to the

consumer will ultimately get the trade.

Heretofore the imported product has enjoyed the bulk of the trade in shelled almonds. There is a market the year round from the baker and the confectioner for the shelled goods. For the nuts in the shell there is a limited market, limited as to the amount consumed and limited as to the time of demand. Almonds in the shell find their readiest market at and immediately before the holidays. Many of the wholesale dealers in almonds in the shell are practically out of the market by the first of February.

Eighty per cent of the imported almonds are shelled, while but five per cent of the California crop are shelled. It will thus be seen that under existing conditions the California almond industry is sadly handicapped. On certain years difficulty has been experi-



Mrs. Myrtle Shepherd Francis and Miss Vida French. Mr. John P. Coy, Commissioner of San Bernardino County, and Prof. G. P. Gray, Chemist of State University. The center figure is Commissioner Earl Morris of Santa Clara County, and at his left is Mr. L. R. Bodefield of Colusa.

enced in disposing of small crops at prices that were remunerative to the grower. If this be true with our present output, what may we expect within the next five years when the crop will probably be in the neighborhood of 15,000 tons? What will happen when California produces an amount equal to the present total consumption of both imported and domestic almonds?

Are imports from Europe at a standstill? Not by any means. In 1900, 5,140,232 pounds were exported to America. In 1914, 4,753,525 pounds of unshelled, and 10,114,901 pounds of shelled goods came here. In 1914 the importations were 10,000 greater than they were in 1900.

Save perhaps in one single variety alone, the Jordan almond, chiefly an imported product, there is not difference enough as to quality between the imported and the home product to demand serious attention. The almond stands transportation well and is not perishable. Having disposed annually of an output several times as large as we produce, the handlers of the imported product have a strong hold on the markets of America. While the demand equals or excels the supply, all almonds delivered will be absorbed by the trade at satisfactory prices. When production excels con-

sumption lower prices naturally prevail. If at any time one competitor places his output on the market at a price prohibitive to the other, there are but two courses open to the less favored grower; these are bankruptcy or a voluntary retirement from the business.

In the final statement of the cost of production of almonds will be found the following items: Taxes, interest on investment, supplies, labor and marketing. Chief of these is labor. When one compares the wages paid in California with those paid in Spain, France and Italy, he finds that the European grower has a most decided advantage. The labor put into a pound of almonds in Spain is only about one-third as much as the California producer is compelled to put into a pound of his product. In the matter of interest and supplies the Spanish grower again has the lesser expense.

When one considers transportation rates he finds that it costs the American almond grower more to deliver almonds to the home market than it

does the Spanish grower to ship across the ocean to the same market. The overland freight rate from California to chief eastern points is \$1.40 per hundred weight. By steamer from San Francisco to New York, via Panama, it is 75 cents per hundred weight. From Malaga, Spain, to New York it is about 27 cents per hundred weight.

The federal government long ago recognized the disadvantages under which the California almond grower labors. For a considerable time a handicap on the European grower in the form of an import duty equal to six cents per pound on the shelled and four cents per pound on the unshelled goods was levied on all imports. This it was thought would equalize the cost of production and delivery to the common American markets. It meant in the judgment of those responsible for the law that it costs about five per cent per pound more to produce a pound of almonds in America than it does in Southern Europe. Recent legislation has re-

(Continued on Page 143)

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THE farm bureau movement in California is growing. In two of the counties the work has been so pressing that the advisers have found it necessary to have assistants. Adviser Frank F. Lyons of San Joaquin County has been given an assistant in Mr. C. J. Williams. He writes this week especially of the work among the boys' clubs in his county. Mr. G. H. Wilson has been named as assistant to Adviser H. A. Weinland of San Diego County.

Stanislaus County is the newest in the state with an organized farm bureau and a county adviser. George M. Connor is the new adviser. He held a conference with the directors of the county farm bureau at Modesto July 29, at which meeting B. H. Cocherson, state leader for California, was present. Mr. Connor was for six years assistant director and acting director of agriculture in the Philippine Islands. He was before that professor of agriculture in North and South Carolina and in Florida. He now has a citrus ranch in Tulare County.

Farm Advisers' Conference

The farm advisers of the counties in the state which have farm bureau organizations—there are now 11—will meet in conference at Berkeley the week of August 9. Their sessions will be held in connection with the American Association of Agricultural Colleges and experiment stations, and American Farm Management Association. Prof. B. H. Cocherson writes: "These societies will be addressed by the foremost American authorities in agriculture, and these meetings are of such importance that all the farm advisers in the state, assistant farm advisers and workers in boys' clubs will be present."

"In the week beginning August 16 there will be held at Berkeley the National Congress of Boys and Girls' Clubs in connection with the meeting of the National Educational Association. This National Congress of Boys and Girls will be attended by the national all-star club winners in the young people's club work of the United States, many state leaders bringing their prize-winning boys with them. This state will be represented by 20 boys who went on last year's transcontinental tour as the prize winners of California, who will at this time hold their annual reunion. The sessions of the National Congress of Boys and Girls will take place at the college of agriculture at Berkeley and it will be open to all those interested in country work with boys and girls."

Kern County, R. R. Mack, Adviser, Bakersfield

Wasco—Director D. T. Fowler, August 2, 8 p. m.

Delano—Director R. H. Hiett, August 4, 8 p. m.

McFarland—Director P. M. Peterson, August 6, 8 p. m.

Willow Springs—Director C. S. Millar, August 19, 8 p. m.

Arvin—Director R. Haven, August 23, 8 p. m.

Shafter—Director E. U. Combs, August 25, 8 p. m.

Bakersfield—Director M. J. Adams, August 28, 2 p. m.

Glenn County, W. H. Heileman, Adviser, Willows

Ord Farm Center, August 2-3, night meeting August 3.

Bayliss Farm Center, August 5-6, night meeting August 6.

Codora Farm Center, August 9-10, night meeting August 10.

Larkin Farm Center, August 12-13, night meeting August 13.

Orland Farm Center, August 16-17, night meeting August 17.

Jacinto Farm Center, August 19-20, night meeting August 20.

The regular meeting of the board of directors of the county farm bureau will be held Saturday, August 7, at the office of the farm adviser.

Between dates of July 6 and 20, Dr. Cady of the bureau of animal industry, was engaged in educational work on hog cholera in the county. Dr. Cady gave demonstrations throughout the county at the various centers. His meetings were well attended and the farmers were greatly interested in the matter of preventive measures and in combating this disease. During Dr. Cady's stay in the county one outbreak of acute cholera occurred and serum treatment was applied to this herd of hogs. The work to the present writing has been entirely successful.

The Glenn County Farm Bureau is paying special attention to the organization of the hog and dairy industry of the county and is about ready to complete such organization. As preliminary to the associations which will be formed, the farm bureau is making complete census of the hogs and dairy stock throughout the various farm centers. The foundation for these associations will be well laid, and it is intended that the various advantages of cooperation and unity of interests shall be enjoyed by the farmers who join these associations.

The Glenn County farm bureau is the first in the state to control the various concessions generally needed at celebrations and picnics. These concessions are netting profits and helping out the farm bureau treasury. By this plan the farmer in a sense has twice the fun at half the price.

The Bayliss and Larkin farm centers are making a study in the marketing of farm products. Both these centers will hold special meetings during the month of August.

The farmers of the Orland farm center are considering the feasibility of constructing in cooperation with the United States reclamation service an electric transmission line from the East Park Reservoir to the rural district around Orland. Sufficient energy can be controlled, should this plan be carried out, to furnish power, light and heat for the town of Orland and the entire rural district surrounding.

Alameda County, C. W. Rubel, Adviser, Hayward

Hayward Center, Mt. Eden, Monday, August 2, 8 p. m.

Castro Valley Center, Castro Valley School, Friday, August 6, 8 p. m.

Murray Township Center, Town Hall, Livermore, Monday, August 16, 8 p. m.

Irvington Center, Library Hall, Irvington, Tuesday, August 17, 8 p. m.

Pleasanton Center, Town Hall, Pleasanton, Thursday, August 19, 8 p. m.

Centerville Center, Stevenson Bldg., Centerville, Friday, August 20, 8 p. m.

Newark Center, Newark Amusement Co. Pavilion, Monday, August 23, 8 p. m.

Niles Center, Chamber of Commerce, Niles, Wednesday, August 25, 8 p. m.

At the Hayward meeting at Mt. Eden there will be reports from the

special committees on weed eradication and on the employers' liability act in its relation to the farmer, also a talk on feeding of dairy cattle by the farm adviser.

Throughout the Irvington, Centerville and Niles sections a campaign for the more extended use of cover crops in the orchards is being inaugurated. Winter vetch is especially recommended.

Napa County, H. J. Baade, Adviser, Napa

Carneros, August 2.

Fly District, August 3.

Browns Valley, August 4.

Coombsville, August 5.

Salvador, August 7.

Rutherford, August 16.

Soda Canyon, August 17.

St. Helena, August 18.

Calistoga, August 19.

Wooden Valley, August 20.

Soscol, Napa, Directors' Meeting, August 21.

Berryessa, August 25.

Pope Valley, August 27.

Mt. George, August 28.

Due to the fact that the farm advisers of the state will have a conference at Berkeley during the week of August 9 to 14, inclusive, there will be a change in the regular schedule. All persons are therefore advised to note the changes, which are for this month only. In the future, the meetings will be held on the regular set time.

The subject, "Essentials of Successful Field Experimentations," will be discussed at these meetings. There will be slides shown illustrating the subject.

Ventura County, William B. Parker, Adviser, Ventura

Fillmore, August 2.

Ventura Avenue, August 6.

Farm Advisers' Conference at Berkeley, August 9-16:

Somis, Monday, August 16.

Saticoy, Thursday, August 18.

Moorpark, Friday, August 19.

Mound, Tuesday, August 24.

Simi, Wednesday, August 25.

County Fair, August 26, 27 and 28.

Messrs. A. C. Hardison and H. H. Eastwood of the county highway commission, Charles Pettit, the county engineer, and Judge Elliott of Oxnard, have taken up at the farm bureau centers during the past month the discussion of the good roads situation, in relation to the proposed issuance of good roads bonds. The bond election, which has been called by the supervisors, is set for August 24. The Moorpark and Somis centers have appointed committees to secure rights-of-way which are needed for the proposed roads.

The farm adviser will have a desk at the agricultural exhibit of the county fair, August 26, 27 and 28. A demonstration of the use of anti-hog-cholera serum and virus, will be held at the Swine Breeders' Association exhibit, at 10 a. m., August 26, at the County Fair.

San Joaquin, Frank F. Lyons, Adviser, Stockton.

Linden, Wednesday, August 4, E. L. Davis, director.

Acampo, Friday, August 6, J. H. Clancy, director.

Stockton, Saturday, August 7, directors' meeting.

Escalon, Monday, August 16, E. A. Clough, director.

Lockeford, Tuesday, August 17, N. H. Locke, director.

Ripon, Thursday, August 19, J. P. Watkins, director.

Manteca, Friday, August 20, J. W. Graves, director.
Tracy, Monday, August 23, H. A. Frerichs, director.
Waterloo, Wednesday, August 25, R. G. Benjamin, director.
Stockton, Friday, August 27, W. N. Harrison, director.
Holt, Monday, August 30, R. G. Cole, director.

Besides the regular routine work of the farm advisory, there are three important subjects which are being carried through by Farm Adviser Frank F. Lyons and Assistant Farm Adviser Carl J. Williams of San Joaquin County. These are the high school boys' agricultural clubs, the South San Joaquin Community Fair, and a dairy survey of the South San Joaquin irrigation district.
The high school boys' agricultural club work is drawing to a very successful close. There are three very much alive clubs in the county. The Lodi club, which has a membership of 18, is growing potatoes; the Stockton club, with a membership of 11, is also growing potatoes. The Ripon club, with a membership of nine, which comprises all of the boys in the Ripon high school, has a fine crop of popcorn to show for their year's work.
The Lodi club is the pioneer club of San Joaquin County. It was organized last year and came through at the end of the season as one of the best clubs in the state. The boys grew tomatoes, which proved so successful that Raymond Beckman, who made a net profit of \$45.50 from one-tenth of an acre, was sent on the transcontinental tour by the people of Lodi as a reward for his good work. Strengthened by one year's experience and with a club consisting mostly of farmer boys, the Lodi club this year is going to show the people of the state just what it can do in the potato business. The judging of this year's crop and the selection of the prize winner has been set for the 2nd day of August.
The Stockton and Ripon clubs are both new this year, but are husky and wide awake, and the boy who will win in either club must be a worker.
The Ripon club, although smaller than the other two, is out for results. They are not only growing popcorn as a club crop, but are using their plots of corn as demonstration plots in the use of fertilizers and insecti-

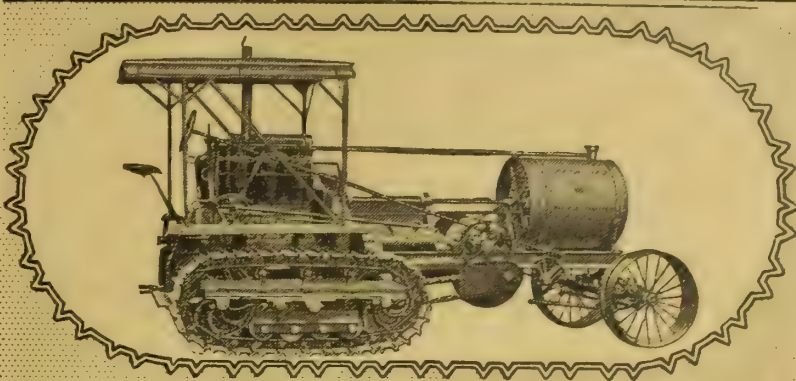
cides for the benefit of the farmers of the community.
San Joaquin County is such a strong believer in the encouragement of its younger generation along agricultural lines that it is going to send all three of its boys' club prize winners east on the transcontinental tour, not only as reward to the boys and a demonstration of what they have accomplished, but also as an example of San Joaquin County's best produce and most valuable asset, the hard working and thinking young farmer.
San Diego, H. A. Weinland, Adviser, San Diego

The permanent organization meeting of the Winter Vegetable Union was held in the chamber of commerce, San Diego, Saturday, July 24. Mr. H. A. Weinland, county farm adviser, outlined the purposes and aims of the organization and Mr. G. H. Wilson, assistant farm adviser, gave the status of the organization to date, reporting 44 members signing 101 acres. In addition to this is a list of 88 prospective members, a number of whom will soon come in.
A permanent board of directors was elected. The members are: Mr. W. R. Edwards, Chula Vista; Mr. H. Culbertson, El Cajon; Mr. W. M. Sharpe, Otay; Mr. J. S. Hull, Nestor; Mr. E. L. Owens, La Mesa; Mr. I. C. Robinson, Spring Valley; Mr. J. S. Scott, El Cajon.
Maricopa County, Arizona, Jas. A. Armstrong, Adviser, Phoenix

Letters are being sent to agricultural organizations throughout the county asking that they send a councilman and one alternate to the next regular meeting at noon at the chamber of commerce, Phoenix, on Thursday September 16. This organization is composed of the regular members of all farmers' organizations in the county. All that is necessary to do to belong is to be a regular member of some recognized organization and to have that organization affiliate with the rest of the county by paying one dollar per year and having their councilman attend the monthly meetings held by the advisory council with the farm adviser. The real purpose of this organization is to consolidate agricultural interests and to study problems as they arise with the idea of disseminating the results of these conferences between the best men in each district, back through them to their local organization with the ultimate end of securing more profit to the producer.
Mr. M. E. Bemis, editor of the Stockman-Farmer, gave an address before the Gilbert Commercial and Country Club on Thursday night, July 22. He showed by an analysis of census figures that the pork production of Arizona was much lower than the average for the United States in spite of the fact that there was more cheap feed here than elsewhere. This means that we will have to raise more pork or ship it in.
Mr. M. C. Tucker, tester for the Cow Testing Association of Mesa, Chandler and Gilbert is a hustler. He has already increased the number of cows in the association from 600 to about 750, and others are coming in daily. He wants to increase this number to 1200.
Cochise and Santa Cruz Counties, Arizona, A. L. Paschall, Adviser, San Simon
Whitewater, July 30, 1:30 p. m.—Girls' Poultry Club, schoolhouse or Mrs. Blalack's; Mrs. J. R. Blalack, director. 3:30 p. m.—Boys' Corn Club, J. W. Shultz's farm; J. W. Shultz, director.
McNeal P. O., July 31, 10 a. m.—Boys' and Girls' Corn Club, schoolhouse or farm (Texas School); W. D. Enfield, director.
Webb, July 31, 1:30 p. m.—Group, farm of W. H. Seaver; W. H. Seaver, director.
Whitewater, July 31, 3 p. m., or 7:30 p. m.—Farmers' meeting, schoolhouse; W. J. Shultz, director.
Douglas, August 2, 1:30 p. m.—With Douglas Chamber of Commerce; Mr. Fisher, president Chamber of Commerce, director. August 3, 10 a. m.—Group, farm of Lee Wilmoth; Lee Wilmoth, director.
Bisbee, August 3, 2:30 p. m.—Farm-

ers' meeting, I X Bar Schoolhouse; F. H. Spalding, director.
McNeal, August 4, 10 a. m.—Group, farm of C. E. Sampson; C. E. Sampson, director.
Light, August 5, 2:30 p. m.—Farmers' meeting, Fair Grounds; Robert Jordan, director.
Wilcox, August 6, 2:30 p. m., or 7:30 p. m.—Farmers' meeting, schoolhouse (Mt. View); A. L. Cropper, director.

McAlister, August 7, 7:30 p. m.—Farmers' meeting, schoolhouse; W. A. McAlister, director.
Bowie, August 9—J. H. Jacque, director. 2 p. m.—Group, Lyday's farm; E. F. Lyday, director.
San Simon, August 10, 2:30 p. m.—Group, R. O. Marritt's farm; R. O. Marritt, director.
San Simon, August 11 to 14, 2 p. m.—Farmers' meeting, schoolhouse; Guy B. Sisson, director.



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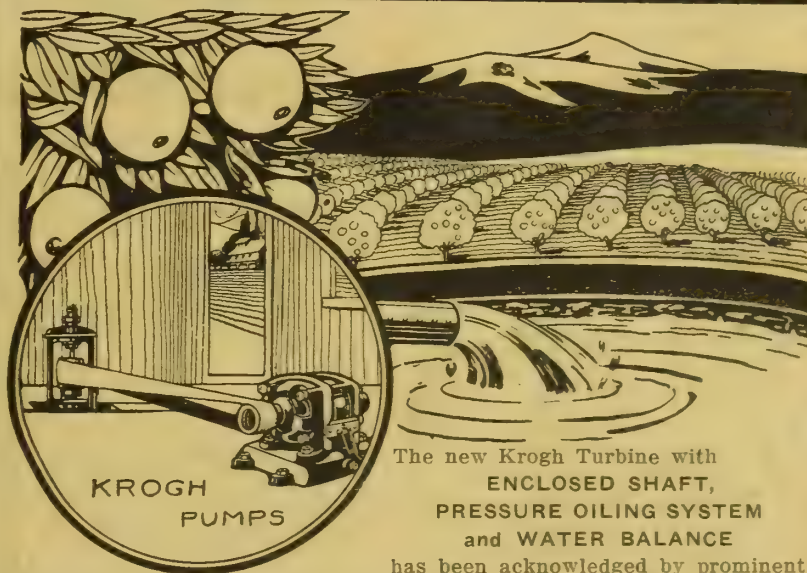
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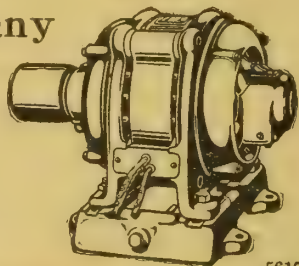
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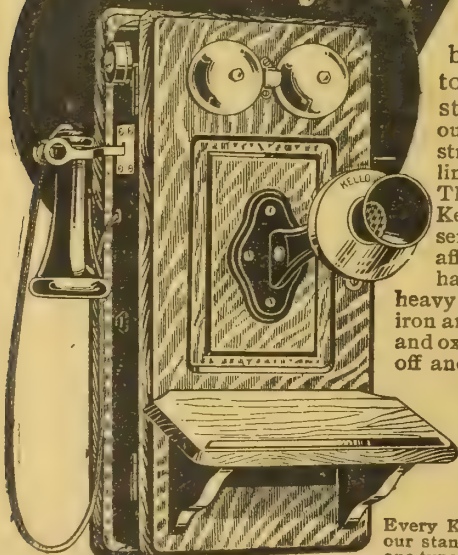
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Small Fruits

Vegetables



THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris



THE month of August might almost be termed our "second spring" as at this time all seeds may be sown for fall and winter. It is most important, however, that the ground be thoroughly irrigated and plowed before planting operations are undertaken.

Practically all varieties of seed usually planted in April may be planted this month. The commercial crop of potatoes should be planted soon to supply the winter market. If possible to secure old seed better results will be obtained than by planting new seed. Owing to the lateness of the season, however, the supply of old seed potatoes is pretty well exhausted, and in many instances it will be necessary to use spring grown stock. This should be well ripened. It is best to wait until the seed sprouts a little before planting. It is also necessary to cut the potatoes a few days before planting so as to dry the wound. Some growers allow these to lie directly in the sun but we think better results are obtained if they are slightly shaded.

Beans and all the early varieties of corn, beets, carrots, chard, kale kohlrabi, lettuce and onions should be planted in good quantities, also turnips and peas for early winter crop. In high, protected districts where tomatoes will succeed these may be planted for transplanting about the first of September; also peppers and egg plant, though these latter should not be planted very extensively at this season.

Cabbage and cauliflower may be planted for the next 60 days, the Winningstadt being the most popular shipping variety of cabbage while the Cannon Ball is by far the best producer. In the Montebello district the Cannon Ball yielded an average of 25 to 33 tons per acre the past season and was eagerly sought by shippers for the Eastern market, bringing from \$12.50 to \$19.00 per ton. The Cannon Ball should be planted much closer than the Winningstadt, thus ensuring heads of six to eight pounds, while if given too much space they grow too large for popular-sized heads. Fourteen to 16 inches is far enough apart to plant the Cannon Ball variety while on good soil with plenty of water 14 inches will give four to eight-pound heads. The Cannon Ball is the earliest cabbage grown, producing a six to eight-pound head two to three weeks earlier than the Winningstadt, which forms generally about a three-pound head, and as cabbage is generally sold wholesale by weight it is much the more profitable variety. The Cannon Ball heads probably a month to six weeks earlier than the Danish Ball Head but is similar in habit of growth and character of head.

Peas for holiday season, when best prices are obtainable, should be planted during August.

Most popular varieties of tomatoes for winter crop are Earliana and First Early, the latter producing more per-

fect fruit though not such a heavy bearer. Tomatoes should set a good crop before cold weather comes and will ripen through the early winter in districts where the temperature does not go too low.

MENDING BROKEN PLANTS

In the small family garden, every healthy, well started plant is of considerable importance, and if, as is frequently the case, one breaks or a cutworm clips it off, it leaves a noticeable gap. Tomatoes, Lima beans, string beans, peppers, cabbage, and cauliflower are usually the sufferers.

The plant thus apparently injured beyond recovery may be one of the few started from a very early planting, or it may be of a cherished variety; always its loss is regrettable.

It is not generally known that at the cost of a little effort such plants can be mended so that they will grow as vigorously as ever. Of course the common method is to make good such a loss by replanting but that entails a loss of time. If the plant be properly mended, there is practically no interruption of its normal development.

The mending, in order to be effective, must be done very soon after the injury appears; it is a case moreover of final as well as first aid, so the work must be done carefully. If the severed part of the plant is wilted it is generally too late to save it.

The closer the injury is to the ground, the easier it is to repair; in fact this kind of mending is virtually limited to wounds that are not over three or four inches above the surface of the soil.

Plants injured by cutworms, which always work their destruction at night, can be effectively mended if they are treated in the very early morning before the sun touches them. In all cases it is necessary that the injury be treated as soon as it is discovered.

The method is simple. From the stump of the plant pull back the soil to the depth of an inch or more, and if a cutworm has done the work, find and kill it; then, taking the severed top, fit the broken base carefully to the stump. Sometimes the break is smooth, sometimes jagged; nearly always you can find guides for the accurate adjustment and fitting of the adjacent parts. When you have done that, pulverize the soil with the hand, and put it back evenly and firmly.

Continue to pile up the earth until the mound is one or two inches above the break on the stem. The soil for packing should be damp and well broken up.

If the weather is cloudy no further precautions will be necessary, but in bright weather provide a shade such as an inverted crate affords. If the season is very dry, give the plant a little water a day or two after mending, but take care that you do not wash away the mound of packed earth from the mended parts.

By this method injured plants of naturally quick growth can, in nearly every instance, be made whole again. The capillary system by which the sap ascends is re-established, and nature is quick to do the rest. In the course of a few days the maimed plant will again be growing as vigorously as its uninjured fellows.—Youth's Companion.

The Lawn and



Flower Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for the California Cultivator
By O. M. Morris



HARDY perennials of all sorts should be sown this month. Many will bloom yet this fall; others during the early spring and summer. This class of plants is most successfully grown in beds, later transplanting to permanent quarters for continued growth and blooming. Plant also seeds of the winter flowering plants, such as calceolaria, cineraria, primula, etc. While these are considered somewhat tender they will succeed under shade of trees or in similar shady positions and will bloom through the winter months. Pansies, centaureas, winter flowering sweet peas and like flowers should be planted for early winter when flowers are scarce and difficult to obtain. Care should be taken in planting pansies to cover closely with burlap or other material and give an abundance of water, otherwise they will burn out. We have obtained best results by enclosing the bed with one-foot boards, drawing a burlap covering tightly over the top. This protection helps to retain the moisture in the bed and affords plenty of shade for the young plants.

Seed of Christmas flowering sweet peas promises to be extremely short this season. If a good quantity of these are desired it is advisable to make planting as early as possible.

One of the prettiest midwinter or early spring flowers we have is the primula malacoides. This has proved the hardiest for out-of-door, slightly protected beds of any of the primulas grown in this section. It blooms practically all the year through, the flowers are dainty and delicately shaded, with fine long stems, making it an excellent cut flower.

Those who have an abundance of shade will find cyclamen a splendid plant. Plant seed now in small protected beds and they will be ready for transplanting in early spring and will bloom very quickly with the arrival of the warm spring months. These grow readily from seed and should be more commonly used.

Every spring witnesses a shortage of flowers, and the past year was no exception. We would recommend large plantings of calendulas, scabiosa, centaureas and hennemannia in order

to have good quantities of flowers for the months of January, February, March and April. These bloom in great profusion during that period when flowers are scarce.

FIGHTING THE ROSE APHIS

Rose growers who allow the flowers to be damaged by the ravages of the rose aphis, have only themselves to blame. Although the aphis is widespread over the entire country, as well as abroad, it is easily controlled. Careful spraying of the plants with solutions of nicotine will remove all danger, and neither the expense nor the trouble involved is sufficiently great to be a real obstacle.

The rose aphis is a small insect with a body about one-twelfth of an inch long. The young and some adult forms are wingless, but certain adults develop wings from time to time. The color varies from green to pink. By means of its slender beak the aphis sucks out the juices of the plant on whose buds and unfolding leaves it feeds. These, prevented from attaining their perfect form, become curled and distorted and the beauty of the flowers is in large measure ruined. Moreover the aphis secretes a sweet sticky liquid called honeydew which spoils the appearance of the foliage on which it is deposited.

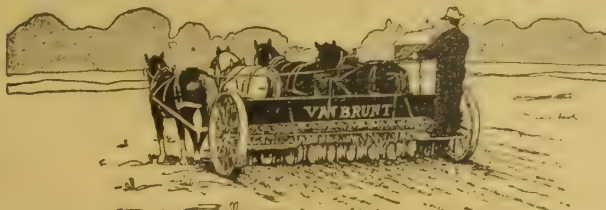
Under favorable conditions it propagates rapidly throughout the year. For example, some recent investigations conducted in California by the department of agriculture showed that one female gave birth to 48 young in six days. At the end of that time the mother aphis was knocked from the rose and perished. This is not at all an uncommon fate. A heavy rain, which washes the insect away is one of its most natural checks, though birds and other insects prey upon the aphis to a considerable extent. Extreme heat is also unfavorable to the aphis.

The rose lover should not, however, depend upon nature to rid his garden of the pest. A 40 per cent solution of nicotine is much surer and not much more trouble. One part of the solution to from 1000 to 2000 parts of water, with the addition of one pound of whale-oil soap to every 50 gallons of the mixture is recommended in Bulletin 90, "The Rose Aphis," which the United States department of agriculture has just issued. A more convenient formula, when there are only a few bushes to be treated, is a teaspoon of 40 per cent nicotine solution to two gallons of water and one-half ounce of whale-oil soap. The soap should be shaved fine and dissolved in hot water.

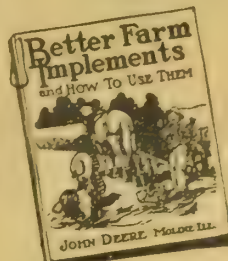
Mixtures of this character should be applied as a fine, penetrating spray by means of a compressed air sprayer or bucket pump. Such a pump costs from \$3.50 to \$15. Together with nicotine solutions it can usually be obtained at seed stores. If no pump is to be had, however, the infested twigs should be dipped in a pail of the solution. Care should be taken to use these solutions at strengths no greater than those mentioned above, since injury to the foliage may result through the use of too much soap, or mildew be favored by too strong a nicotine solution.

Application of insecticides should be made on the first appearance of the pest, which varies from the time that the leaves are put forth until the buds begin to form. Applications should be repeated as found necessary.

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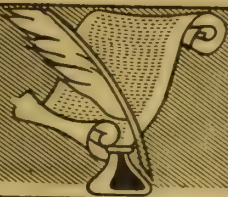
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of complaint must be sent us within 30
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the subscriber must have mentioned the
Cultivator when writing the advertiser.**ANNUAL SALE**Directors of the Sacramento
Valley Development Association are
moving toward securing an annual live
stock public sale at the State Agricul-
tural park at Sacramento and in con-
nection with it an exhibit of Califor-
nia products transferred from both
the expositions.We quote resolutions passed at a
recent meeting:"Resolved, That the executive offi-
cers of this association are hereby di-
rected and empowered to aid and fur-
ther by every legitimate means in the
power of this association the develop-
ment at Sacramento of a great annual
livestock sale by which the breeders
of cattle, horses, hogs, sheep, poultry
and other livestock in this and other
western states may enjoy the oppor-
tunities of a central market where the
exhibition and disposal of livestock can
be carried on in a manner at once
convenient for the purchaser and pro-
fitable to the producer."**"STANDARD"**As applied to a fruit box what
does standard mean? The citrus grow-
er several years ago began using
"fancy," "choice," and "standard," as
the three grades of his fruit. Later
exceptionally fine fruit was called "ex-
tra fancy." "Standard" fruit was sel-
dom shipped to the Eastern market.
It was of a low grade and little better
than cull, and was usually sent to
nearby markets, where it generally
brought satisfactory returns to the
grower. It is probable that this grade
will be discontinued or its use mate-
rially lessened.Now comes the apple grower of Wat-
sonville and chooses "standard" as the
term to be applied to his highest grade
of fruit. The peach grower for some
years has used "standard" in this
way. Our State Fruit Growers' con-
vention, or the association which maybe formed, should deal with nomen-
clature of all fruits and terms used
in packing and shipping, harmonizing
them so as to eliminate confusion and
give real value to any designation ap-
plied to any California fruit.**THE FARMERS' LEAGUE**Some of the best work done
during the election campaign last fall,
when amendments, initiatives and
referendums were so plentiful on the
ballot as to be absolutely confusing,
was by the Farmers' Protective
League. Its principal fight was
against the eight-hour bill which con-
tained provisions entailing great loss
on all farmers and ruin to many. It
and a federation of farmers in the
southern end of the state sent out
thousands of pieces of printed matter,
also held meetings in all sections till
a great majority was rolled up against
the measure. The section working
in the southern end of the state ceas-
ed its active work after the election
but the league continued its work,
also continuing the issue of the paper,
the organ of the league. Its activi-
ties resulted in the defeat of some
measures before the last legislature
and in watching the needs of agricul-
ture generally. The burden of this
work has been almost entirely thrown
on a few. The opportunity for bene-
fitting agriculture is so great that this
organization should be maintained.
It will then be ready for the next
attack which may be made upon the
interests of the producer. Amongst
its directors those who have worked
hardest perhaps are Messrs. McKeitt,
Hecke and Dunn.**AVOCADO-AHUACATE**The action of the avocado grow-
ers of California in taking the name
"Ahuacate Growers' Association" has
caused some comment as to the advis-
ability of this effort to change the
name of the fruit. The word avocado
is now beginning to replace the mon-
grel alligator pear combination and
any movement which will tend to dis-
place such a term should be encour-
aged. Ahuacate looks formidable, but
it is really a beautiful sounding word.
We feel, however, that it would be
some time before it could be adopted.To get a line on the general usage
in Florida and the East we wrote to
Mr. Peter Bisset, plant introducer
in charge of foreign plant introduction,
and he writes enclosing letters which
he received from Messrs. L. C. Cor-
bett, horticulturist, and E. R. Lake
and C. P. Close, pomologists connected
with the department. Mr. Corbett
merely refers to the communications
of Messrs. Lake and Close and writes:
"In their judgment I concur."Mr. Lake writes: "This division of
the service has accepted the use of
the term avocado for the fruit men-
tioned. This term is recognized by
the American Pomological Society as
the official term, and there seems to
be no really sound ground upon which
to endorse a change in the name.
'Where a variety (or type) name
through long usage has become thor-
oughly established in American poma-
logical literature it should not be re-
placed or radically modified.'—Code
of the American Pomological Society,
upon which the action of this office
is based."Mr. Close writes: "Since the name
'avocado' is so thoroughly established
in horticultural literature and has been
so generally adopted wherever this
fruit is grown, or marketed I do not
deem it wise to consent to a change
to 'ahuacate,' even though this is the
original name."In forwarding these letters to us, Mr.
Bisset comments: "These letters are
self-explanatory and I fully agree with
the expression contained in them,
which is that in so far as the 'avocado'
is commonly called by this name in
this country it would not be wise to
attempt to change it to 'ahuacate.'"**NEWS FROM THE FRUIT GROW-
ERS' CONVENTION**Regarding the permanent state as-
sociation of fruit growers or a federa-
tion of all the agricultural interests
of California in one great organiza-
tion satisfactory advance was made.
I mean now, along both lines. That
is the movement which was started
to organize a state association of
fruit growers and afterwards became
a movement to federate all agricul-
ture has appealed to many as wise;
also it has seemed wise that the origi-
nal idea should be carried out. The
committee consisting of Dr. A. J. Cook,
F. B. McKeitt, Geo. H. Hecke, Dean
H. E. Van Norman, B. F. Rush, Dr.
Herbert J. Webber and C. B. Messen-
ger, which was appointed by Commis-
sioner Cook after the Los Angeles
convention, met in Sacramento in Jan-
uary and decided that a larger com-
mittee or a committee representing a
larger scope of agriculture should be
appointed. A meeting was held in
San Francisco on February 22, at
which such committee consisting of
Prof. H. E. Van Norman, H. J. Web-
ber, G. H. Hecke, Guy Miller, Chas.
Kimble, Geo. C. Roeding and Carlyle
Thorpe was appointed. This com-
mittee has worked along the line of
the general federation and has a form
of constitution which will be reported
to a general convention to be called
later. This committee also reported
to this convention recommending the
formation of a state fruit-growers' as-
sociation which should affiliate with
the federation. This report was unan-
imously accepted by the convention
and it is presumed that the original
state fruit growers' convention com-
mittee appointed at Los Angeles will
recommend a form of constitution
which will be adopted at the time of
the Visalia convention.The meetings of the horticultural
commissioners brought together prac-
tically all the commissioners of the
state. This meeting is not so impor-
tant as the fall meeting, at which offi-
cers are elected. This spring or sum-
mer gathering is more educational
and gives opportunity for much dis-
cussion as to methods and as to en-
forcement of newly enacted laws. One
feature which has succeeded in get-
ting the commissioners "all het up"
is a sensational story sprung in the
San Francisco papers that a scheme
was hatched by the commissioners in
a star chamber midnight session at
Palo Alto to secure a successor to
State Commissioner A. J. Cook on the
expiration of his four-year term in
October. The commissioners say
there was absolutely no discussion on
the subject. It is also understood
that Dr. Cook will make no campaign
for reappointment, but if the governor
and the fruit growers wish it he will
accept another term of service. In
the discussion about the "Quad"
amongst delegates at the convention
the only other name mentioned in con-
nection with the office was that of
Geo. H. Hecke, county commissioner
of Yolo County. Mr. Hecke will not
make a campaign against Dr. Cook.The meeting in Festival Hall on the
exposition grounds on Saturday even-
ing resulted in a much larger attend-
ance than was anticipated. Prof. John
M. Coulter of Chicago University did
not appear, but Director J. G. Lipman
of the New Jersey experiment station
was present and made an excellent
address on the fundamentals of soil
fertility. He made a distinction be-
tween the European and the American
farmer, in that the American fertilizes
his soil and the European fertilizes his
crop. "We must produce larger crops
as land goes higher in price. To pro-
duce larger crops cheaply requires
thorough understanding of soil condi-
tions and crop requirements."

C. B. M.

Agricultural NotesKansas will hold an International
Wheat Show at Wichita, October 4-14.Many advance orders for Washing-
ton apples have been received from
Australia, Manila and Honolulu.The apple crop of Ontario, Canada,
will be short this year, the output
being estimated at from 60 to 75 per
cent.Brazil's Poultry Association will
hold its second annual national expo-
sition at Rio de Janeiro, September
5 to 8, 1915.What is said to be the largest pump-
ing plant of its kind ever built, having
a capacity of 1,000,000 gallons a min-
ute, has been established in Louisiana
for drainage purposes.Portugal's wheat crop this year it is
estimated will supply the local de-
mand for only about six months.
Beans, rye and oats are all below nor-
mal. The corn crop is, however, above
average.The average price of petroleum in
the United States was \$0.806 per bar-
rel in 1914, or \$0.148 less than in 1913.
The decline has continued, the average
price being probably 10 to 12 per cent
lower than last year. Exports, how-
ever, are becoming more normal.New Zealand farmers are much in-
terested in sugar beets and are in-
forming themselves as to growing re-
quirements, value of pulp for stock
feed, cost of establishing factories, etc.
It is proposed to ask government as-
sistance in starting the industry.Great Britain has agreed to allow
the shipment of sugar beet seed from
Germany to the United States on cer-
tain conditions. The seed must come
from some neutral port, there must
be no other place from which to get it,
and no exchange of products will be
allowed.The favorite drink in the French
army today, as it is in both the Eng-
lish and Russian armies, is tea. There
are many tea-canteens along the front,
where men can get hot cups of tea
on entering and leaving the trenches.
Single canteens sometimes serve
25,000 cups of tea a day.July 27 was Agricultural College
Day in Weld County, Colorado. A spe-
cial program was arranged for the
day, beginning with a visit to the col-
lege buildings, followed by a regular
old-fashioned picnic dinner on the
campus and ending with a visit to
the beautiful horse-breeding farm. It
is hoped that this will become a regu-
lar custom with all counties in the
state.Central America, from the Pacific
to the Atlantic, has been suffering
from a plague of grasshoppers. The
banana plantations have been ravaged
and all crops have been seriously dam-
aged. Last year the pest was so de-
structive that the governments of sev-
eral of the states bought food sup-
plies of corn, beans, rice, etc., and
sold to the people at cost. This will
probably be again necessary.Horses and mules constitute large
exports from the United States at
present. The annual average shipped
abroad for several years has been
28,000 horses, average value \$142, and
5000 mules, average value \$150. Dur-
ing the 10 months ended April 30, 1915,
exports of horses numbered 215,759,
valued at \$47,783,848, or an average
of over \$220 per animal, and 39,229
mules, valued at \$7,478,014, or over
\$190 per head. It is anticipated that
there will be a large demand for these
animals after the war for farm use.

Agricultural News Notes



of the Pacific Coast

Northern California

Very heavy shipments of butter are still being sent to Australia from San Francisco.

The date of the Esparto Almond Festival has been changed to Saturday, September 4.

Successful crops of beans are being raised in Butte County this season without irrigation.

Residents of the Thermalito district of Butte County want an irrigation district established there.

The State Fruit Growers' Convention is being held this week at Stanford University, Palo Alto.

Olive growers of Oroville, in Butte County, are talking of forming a local cooperative marketing association.

A cooperative association of rice growers of Oroville was recently incorporated to mill rice produced by members.

The vintage festival and Napa County farm bureau fair will be a great success if efforts now being put forth are an indication.

The Humboldt County Dairymen's Association picnicked at Loleta the last day of July. This was the third annual picnic of the association.

The Solano County exposition commission has selected Mr. Millard Sharpe of Vacaville to take charge of fresh fruit shipments to the Panama-Pacific exposition.

Chambers of commerce of the Sacramento Valley have organized a Homeseekers and Industrial Bureau which will maintain offices in the Examiner Building in San Francisco.

The Oroville chamber of commerce has begun active planning for the orange and olive exposition which will be held early in December. It is planned also to emphasize the exposition as a county fair.

Sutter County canneries are reported to have made no contracts for fruit, holding to lower prices than growers can accept. Some growers are trying to work out a plan to lease a plant and do their own canning to save this season's fruit.

Growers of cling peaches in Yuba and Sutter Counties are facing a desperate situation with most of the canneries closed and few buyers for their fruit. Some efforts are being made to have growers lease canning plants and operate them for themselves.

The war is a convenient alibi for almost everything, but sometimes causes some very real hardships and damages, as is shown in the announcement by the state horticultural commission that many thousands of useful insects imported to aid in fighting harmful insects, have died in transmission, owing to delays and difficulties in transportation.

Dairymen and creamerymen of Humboldt County are again discussing whether to feed or not to feed turnips to dairy cows. The general opinion seems to be that if turnips are fed too heavily the quality of the butter is seriously affected, therefore, in order to run no risk of injuring the reputation of Humboldt butter no turnips at all should be fed.

Central California

The cannery at Hanford will be closed this season.

Tulare peach growers have formed a temporary marketing association.

The Kerman Cured Fruit Association last week sent out its first dried apricots.

Watermelons are bringing about \$15 a ton to Turlock growers. The crop is a very small one this year.

A special trainload of 15 cars of horses was shipped from Tulare last week to New York, bound for France.

The new dried fruit rates announced by the Southern Pacific to Eastern points will become effective on August 21.

The Selma, Fresno County, cannery has a full crew at work, nearly 500 men and women packing Tuscan clings.

The navel orange crop of the Lindsay district of Tulare County is now estimated at about 75 per cent of normal.

Manteca, San Joaquin County, is now marketing its melon crop, which is proving to be 50 per cent short of last year's.

The newly organized California Ripe Olive Growers' Association is urging Tulare County olive growers to become members.

The Terra Bella irrigation district project has finally been approved by the board of supervisors. An election will be called for August 7.

The Tioga Pass road through the Yosemite national forest, which was recently acquired by the national government, was officially opened July 28.

There is talk of not holding the citrus fair in Tulare County this year because it is feared the new auditorium building cannot be completed in time.

Thompson Seedless grape growers of Tulare County are finding much of their crop already showing a sugar content above the required test and the fruit is being rushed off to market.

The newly formed Watsonville Apple Distributors' Association has been joined by almost every apple grower in the Pajaro Valley and growers generally feel much encouraged by this activity.

During this season's work employees of the California Fruit Canners and Central California Canners will wear caps and aprons furnished by the management. This is mainly to improve sanitary conditions of handling fruit.

Bean growing has been demonstrated a success in Kern County. Large acreages have been planted this season at Lerdo, Shafter, Wasco, and in the district around Bakersfield. Many experimental plots were planted to teparies.

It is estimated that 8000 acres have been set out to Thompson Seedless grapes within the last two years, making an acreage of about 38,000 in the state. There is some apprehension lest the good prices which have always prevailed for Thompson Seedless disappear in face of the ever-increasing tonnage of fruit.

Southern California

Hog cholera is practically banished from the Imperial Valley.

All the sugar factories in Southern California will operate this season.

Beet harvesting is on in earnest in the fields about the Oxnard sugar factory.

The sugar beet harvest has begun in the San Luis Rey Valley, San Diego County.

Despite the walnut blight Orange County expects to harvest her largest crop of walnuts.

A \$10,000 fish hatchery is soon to be established in San Antonio canyon, north of Ontario.

The Anaheim Citrus Association now has a membership of over 200. Six years ago it started with 14 members.

C. P. Taft of Orange has just sent an exhibit of avocados to be placed with the Orange County display at the San Francisco exposition.

The barley yield of Orange County is estimated by the county assessor as one-fourth less than last year's, amounting to only about 150,000 sacks.

The Los Alamitos Sugar Factory in Orange County began slicing July 28. With the opening of the Los Alamitos factory all five of Orange County's beet sugar plants are in operation.

Bean growers of Garden Grove, Orange County, expect to form a cooperative marketing association. They will also consider cooperative methods of cleaning and hauling their crop.

During the month of June the Placentia Orange Growers' Association of Orange County sent East 115 cars of Valencias, receiving for the whole lot \$2.00 net per box, including all grades.

A schedule of rates for the sale of Owens River water to the San Fernando Valley for irrigation and domestic purposes has been placed before the Los Angeles city council for its approval.

Senator D. W. Mott of Santa Paula has compiled some of the more important game laws passed at the last session of the legislature and this compilation is now available for Ventura County sportsmen.

The California Vegetable Union announces that it will build a large packing house at Garden Grove, the work to begin about the middle of August. All kinds of vegetables will be received at the new house.

The deer season in District Number Four opened September 1. District Number Four includes Los Angeles, San Bernardino, Riverside, Imperial, San Diego, Orange, Ventura and Santa Barbara Counties. The season lasts only for the month of September.

Prof. John T. Barrett, professor of plant pathology at the state university, was recently in Hemet, and in company with Deputy Horticultural Commissioner Ellis visited many of the orchards of this vicinity. Prof. Barrett has made a special study of shot-hole fungus. He has arranged to make a number of experiments in Hemet Valley during the fall and winter.

The Coast

Texas is sending out heavy shipments of Alberta peaches.

The prospects for a yield of winter wheat are unusually fine in Montana.

Salt River Valley, Arizona, cantaloupes are bringing top prices this year.

Shipments of this year's wheat are being made from Walla Walla, Washington.

The wheat crop of the Inland Empire is now estimated at 70,000,000 bushels.

Weber County, Utah, has a county farm demonstrator. He is Preston Thomas of Ogden.

The apple crop of Wenatchee, Washington, is estimated at about 75 per cent of last year's.

A broom factory is being installed at Chandler. The local broom straw is now ready for the factory.

The Utah-Idaho Sugar Company of Rexburg, Idaho, has 800 acres on which it is raising beet seed. The crop is reported very good.

Reports from Oregon indicate that the hop pick this season will equal that of the record year of 1906 when 160,000 bales were harvested.

The establishment of a creamery station at Chandler, Arizona, dairymen estimate is saving them two and one-half cents a pound on their butter fat.

Dairymen of the section about Willcox, Arizona, met a United States dairy expert on July 21 to discuss procedure in establishing a creamery at Willcox.

The directors of the Maricopa County Farm Association held their first meeting and lunch in the chamber of commerce rooms at Phoenix, Thursday, July 22.

The American Shorthorn Breeders' Association has donated \$330 to the premium fund of the Cascade International Fat Stock Show to be held in North Yakima, Washington, November 22-27.

The North Yakima cherry season closed July 16 with the shipment of a carload to Montana. One hundred and thirty-one carloads was the total shipment from this point for the season, against 75 carloads last year.

Approximately 145,000 acres of the former Flathead Indian reservation in Montana will be offered for sale at Kalispell and Missoula, Montana, during August under regulations announced recently by Secretary Lane.

A poultry and egg demonstration car is being sent over the railways of Washington by the United States department of agriculture. The car is equipped with refrigerator, egg candling room, testing, grading apparatus, etc.

The stockmen of Colorado, through the Colorado Stock Growers' Association, filed suit against all the railroads operating in the state, on the grounds that they have not complied with the law in the matter of fencing their lines, and that the stockmen are losing thousands of horses and cattle in consequence, for which they receive little or nothing.



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SAVING THE WASTES

TO give an insight into some of the little economies in European countries we quote from a translation of a German publication as to drying of potatoes and curing of beet tops for forage.

Drying Potatoes

The methods adopted in drying potatoes use hot gases, steam or hot oil. The first are especially employed for drying sliced potatoes and the others for potato flakes. For drying by means of hot gases, the desiccators used are those on the drum, trough and sometimes on the hurdle system, whilst for steam or oil drying only roller desiccators are used.

The cost of drying by these various methods varies according to the size of the plant and the duration of the work. The longer this is, the lower the total expenses per hundred weight of potatoes. In the second place the cost is determined by the output of the plant, which in its turn depends chiefly upon the consumption of coal. For this reason and especially in the manufacture of flakes, motor engines that work well and at the same time supply the steam to be used in the drier must be used. In drying by means of the combustion gases a good utilization of their heat must be attained. Besides the cost of drying potatoes varies according to the starch content of the same potatoes and the water content of the dried potatoes. The greater the starch content the less moisture is there to evaporate and the greater the quantity of dried potatoes turned out in a given time. With a good plant the average cost of drying is 8.4 to 9.6 cents per hundred weight of raw potatoes if the gases of combustion are used, and 10.8 to 11.9 cents per hundred weight with steam.

The utilization of raw potatoes by means of desiccation depends on the starch content of the tubers, the cost of drying, and the price of the dried potatoes when they are not consumed on the farm itself but are sent to the market.

As dried potatoes are often used instead of foods rich in carbohydrates, such as maize, barley and the like, their price must be considered in connection with that of these foods on the market. In the feeding of horses their price must be compared to that of oats. At a price of \$1.80 per hundred weight for dried potatoes and a cost of 9.6 cents for drying, the writer considers that one hundred weight of fresh potatoes containing 16 per cent of starch is worth 34 cents; if they contain 18 per cent they are worth 40 and 45 cents when they contain 20 per cent. At a price of \$2.06 per hundred weight the prices are respectively 41, 46 and 51 cents.

In selecting the method of drying to be adopted the economical conditions and the uses to which the product is destined must be considered. The writer advises a plant for the production of flakes, if potatoes are the only crop to be worked up and if they are to be used chiefly for feeding to pigs, also if the plant is connected

with a distillery or starch works or dairy and if the quantity of potatoes is not very considerable. If on the other hand besides potatoes, beet leaves, other forage or cereals have to be desiccated, and if the product is to be fed to horses, cattle and sheep it will be preferable to select a plant for the production of dried slices. As for the dimensions of the apparatus it must be remembered that a large plant is not profitable unless the time during which it is worked is fairly long, namely from 150 to 180 days. In the case of a cooperative drying plant the first thing to be done is to make sure of a sufficient quantity of potatoes to be dried. The writer considers that the high cost of cooperative drying is due to the fact that the time during which the plant works is too short.

When the quantity of potatoes to be dried is not enough to keep an independent plant going, recourse may be had to one attached to a distillery, dairy, etc. Before deciding it is necessary to consider carefully all conditions.

The writer is of the opinion that potatoes which are to be fed shortly after the harvest to cattle, sheep and pigs should not be dried. On the contrary those destined for horses should always be dried. Potatoes stored up to the end of the winter suffer a loss of substance amounting to eight and even 10 per cent, and if they are not fed to the live stock until the spring or summer the loss reaches as high as 25 per cent. Supposing the prices of potatoes to be 36 or 48 cents per hundred weight the loss would be nine or 12 cents per hundred weight. The loss caused by storing is about the same as the cost of drying. When the price of potatoes is low the cost of drying is not less than that of ensilaging, but drying affords the possibility of utilizing completely all the nutritive matter, and in years of abundant crops it saves the farmer from having to throw on the market large quantities of potatoes at a low price or to feed them wastefully to his stock.

Desiccation of Beet Leaves

Among the secondary products and residues of the cultivation of beets the leaves present the greatest interest as to desiccation, and this because their ensilage, and their subsequent feeding to live stock present several drawbacks, amongst which is particularly the loss of nutritive matter. This method of using them entails a considerable loss of money as may be seen from the following figures: From 1906 to 1910 in Germany the acreage devoted every year to beets averaged 1,113,700 acres. Admitting the amount of leaves produced per acre to be ten tons, the total crop would be 11,137,000 tons. If it be considered that two-thirds of this amount is ensilaged and that during this process one-third of the dry matter is lost, the loss amounts in round numbers to about 2.5 million tons of fresh leaves, or calculating that five tons of fresh leaves produce one ton of dried leaves, the loss amounts to about half a million tons of dried leaves worth about \$5,840,000.

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The desiccation of beet leaves is carried out chiefly in drum desiccators and sometimes also in hurdle desiccators. The various models of the former differ considerably from each other in the construction of the interior and the gradual passage through the drum of the stuff to be dried. The progress achieved during the past ten years in this field becomes evident if the composition and aspect of the product be considered. Formerly the dried leaves were hard and brittle, while now according to recent methods the dried leaves have preserved their original green color; they are soft, elastic, cleaner and possess a starch value of 35 to 38 per cent, instead of 25 to 28 as formerly.

The cost of drying varies, as it does with potatoes, according to the size of the plant and the duration of the work, which, considering the great losses which would be caused by rotting, cannot be extended at will, but averages 70 to 80 days. On account of the shorter working period the interest and amortization of beet leaf drying plants is fairly high. Whilst in potato drying about 4.8 to 7.2 cents per hundred weight is to be debited as general expenses, in beet leaf drying 11.9 cents is to be debited. The writer believes that a notable diminution in general expenses is possible when the plant can be used also for other foodstuffs. Further, the cost of drying is influenced also by the efficiency of the plant and by the amount of fuel consumed. If coal is used about 13 to 14.3 cents is required per hundred weight of dried leaves. Using lignite the cost of fuel is less. Again the cost of drying varies with the amount paid for labor and the use of teams which may be set down at 9 to 11.9 cents per hundred weight, and with the moisture content of the fresh and dried leaves. If the leaves are dried immediately after the harvest the writer states that for the produc-

tion of 100 pounds of dry leaves containing 12 to 15 per cent of water, from 550 to 600 pounds of fresh leaves are required. If on the contrary the leaves are left for a certain length of time in the field, only 350 to 500 pounds, or an average of 450 pounds, are required to produce 100 pounds of dried leaves. The question as to how far this partial drying of the leaves may be carried without incurring too heavy a loss depends naturally upon the weather.

The cost of drying in an installation devoted exclusively to beet leaf drying ranges from 36 to 38 cents per hundred weight of dried leaves. If other forage is dried the cost also diminishes.

As for the profitability of drying beet leaves the writer considers first class beet leaves to possess about the same value as the best meadow hay. If the economic value of the latter be taken at 60 cents per hundred weight, the value of the leaves, after deducting 36 cents for the cost of drying, is 24 cents.

Assuming 450 pounds of leaves partially dried in the field to be necessary to produce 100 pounds of dried leaves, the hundred weight of the former would be worth 5.3 cents, which must be considered as a favorable price. In view of this and of the disadvantages attendant upon an excessive use of silage an extension of the practice of drying beet leaves is justified, especially in breeding farms in which ensilage is often injurious. In milk farms on the contrary, where milk and dairy produce command only medium prices, the use of dried leaves is, according to the writer, of limited advantage because the successful production of milk depends only very partially upon the feeding of concentrated foods. Nevertheless here also desiccation allows of a better utilization of the beet leaves.

Drying Sugar Beet and Mangold Slices

In this field the technique of desiccation has not achieved any considerable progress recently. The number of sugar factories which have erected drying installations has undoubtedly increased of late, which speaks for the recognition of the importance of the drying of the slices.

The market price of mangold slices was, during recent years, higher than their economic value, which was 91 to 97 cents per hundred weight. The price of sugar beet slices stood also higher than their nutritive value.

FEEDING THE CALVES

It has been shown by numerous experiments that the feeding and care given calves for the first year of their lives are very largely responsible for their value as dairy animals. True, heredity is also a great factor, but even with ancestors equal to the best milk producers, the calf must have the right kind of feeds to develop into an excellent dairy animal.

Feeders have found that calves intended for dairy cows should have plenty of feeds rich in protein, that these rich protein feeds have a tendency to develop frame, type, milk glands, udder, etc., necessary for heavy milk production.

It does not seem that there should be much difference between heifer calves, one fed on a ration suitable for developing the dairy cow and the other for beef production, but experiments show that there will be considerable difference.

Animals with poor milk producing ancestors with the best of care are not likely to make great milk producers. Animals with heavy milk producing ancestors may not themselves become great producers. But they are more likely to become excellent producers if the calves are fed the right kind of ration and given good attention than if neglected during the first year of their lives.—Farm and Ranch.

Some of our western butter factories accept any kind of cream without regard to its condition when delivered, and they usually pay the same price for all grades of cream. In some dairy sections noted for the high quality of butter produced the operators have found that in order to get the highest market price for their butter it is necessary to demand a good, clean, raw product. Hence they are grading all cream and paying on a quality basis. As a result the producers are studying the situation more closely, as they realize that they must provide better facilities in caring for their product. Many patrons who deliver sweet cream object to having it mixed with inferior grades, so they find it to their advantage to deliver the product in individual cans.—Denver Field and Farm.

It is generally found that the most successful calf raisers are those who clean the calf pails just as often as they wash the milk pails. The buckets are washed daily and thus there is no chance for bacteria to contaminate the milk before being fed. Remember, in washing any pail that is used for milk, cold water does not kill bacteria. Cold water only washes out the bulk of them. Good boiling water kills most bacteria, and those not entirely dead are finished when the dry pail is placed in the sun.

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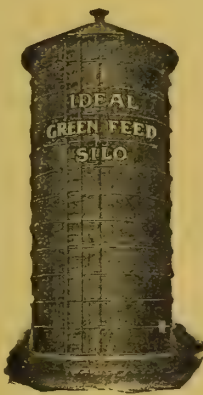
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This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

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Citrus Fruits, by Coit (new).....	2.00	2.75	4
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Poultry for Profit



SOME FUNDAMENTAL QUESTIONS

Written for the California Cultivator
By Jean A. Koethen



NDERTAKING a new line of work is never an easy matter. There are always new problems to solve, new channels of information to

become familiar with, and always the struggle to adapt old tastes and habits to new demands and conditions. The "old dog" does not readily learn new tricks, and the older the dog the more difficult the learning. This is obvious in other kinds of work. That it is less obvious when poultry work is under consideration is due largely to the misleading statements so carelessly spread abroad by real estate promoters. For instance, the real estate page of a leading daily recently contained an account of a retired school teacher somewhere (it did not say where) who was making \$5000 a year with chickens on a few acres of ground, and who had kept as many as 8000 chickens on one acre at one time. There may be such a woman, but I do not know her, and if she ever did keep 8000 hens on an acre she did not keep them long.

What does it cost to go into the chicken business, and what income is to be expected? These are questions every intelligent person wishes to have answered before venturing on untried paths.

There lies before me a letter from a lady who says she has "a little experience, combined with common sense and a desire to know more"—a most happy combination, by the way, and one that ought to spell success. She says:

"I have 80 acres of land, and intend to plant it to trees, and in the meantime go into the chicken business and raise most of my feed between the trees. Please send me the following information:

"About how many chickens would I have to have to bring me in \$100 per month? What hens are considered the best layers? About what would it cost to build henhouses and runs for the above number of hens? What is the estimated cost of one hen per year? What is the estimated income from one hen per year? Have you plans for henhouses and runs? If not, could you tell me where to get such plans?"

It is easy to answer these questions in a general way, according to the law of averages, but not easy at all to say what this particular woman might or might not be able to accomplish. The personal factor is bigger than any other in poultry work. Where one person may make but 75 cents a year from each of his hens, another proudly reports an average of \$2.00 from the same breed. In general one dollar per year per hen is as much as it is safe to expect, but many make more. In one of the recent egg-laying contests the hens averaged about \$7 per year, but they were of course exceptional hens.

Allowing one dollar per year as the probable income, it is plain that 1200 hens would be required to produce an income of \$100 per month. With feed at its present prices the number might be greater than this, but here is another unknown quantity. She plans to raise a part of her feed. What difference will this make in the net income? I do not know, for the labor question comes in here, and that is a big question.

The best paying poultry plant is the one-man plant, that is, the plant on which all the work is done by the owner, with perhaps some help from his family. When you begin to hire help, cost of production is mightily increased. Now my correspondent does not mention this point. I do not know whether she plans to do all the work herself, whether she has children who can carry part of the load, or if she must depend on the hired man. One man giving his entire time to the work can care for 1200 or possibly 1500 hens. Can one woman do it? On one Leghorn ranch with which I am familiar 2000 hens are cared for by the owner, his wife and grown son and daughter. On another two brothers, with occasional hired help, care for 1500. On a third a husband and wife, with help from their sons out of school hours care for 1200. In all these cases a large amount of commercial hatching is done in addition to the care of the flock and the raising of chicks to keep up the laying stock. I know a woman, a successful breeder of fancy stock, who, with the help of a boy, raises 600 or 800 chicks each year in addition to the care of her flock of 200 or 300 hens, but she does absolutely nothing else. "I don't even sew the collars in my dresses," she said to me when I visited her.

What does it cost to keep a hen one year? Here again the personal factor comes in. Skill in feeding will reduce bills considerably. Raising part of the feed will reduce them still more. Buying feed in large quantities and at the time when it is cheapest is an important item in economical feeding. Generally speaking, the keep of a hen is in the neighborhood of \$1.50 per year. Just now I would rather allow more than less because of the high price of wheat and bran.

Setting our aim at the net profit of \$100 per hen, and allowing \$1.50 for her keep, it is easily seen that a hen must lay at least eight dozen eggs a year at an average price of 30 cents a dozen to be worth keeping. Here is another factor in economical poultry keeping, the hen. I am not sure which is more important, the man or woman behind the hen or the hen herself. My correspondent asks which is the best laying breed, and whatever I say I shall be treading on somebody's toes. Theoretically, there is no best breed. Practically, the White Leghorn is the only breed that has been thoroughly tried out and found satisfactory for commercial egg production. If you plan to keep 1000 or 1200 hens and to make egg production your main line, the White Leghorn, which is kept on egg farms all over California, is the only breed. If, on the other hand, you think it wiser to aim at a general farm flock of 200 or 300 hens, producing both eggs and meat, there are many good breeds to choose from. I think Rhode Island Reds are rather more highly thought of in this part of the country as a dual



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purpose breed, but, take the country over, the three American breeds, Wyandottes, Rocks and Reds, stand side by side as farm flock birds. The main thing is to get a good laying strain of whatever breed you choose, and this is easier with Leghorns than with the heavier breeds. Leghorns have been bred for many years exclusively for egg production while the heavy breeds have been bred more or less for points, and while the two are not always antagonistic they often are. I believe there is a new day ahead for the heavy breeds, for they can be made by proper breeding to lay as many eggs as Leghorns, while they also supply mothering and meat.

The cost of building houses and runs is usually estimated to be somewhere around \$1 for every bird housed, but this depends on the amount of labor hired and the quality of lumber used. The man who does his own carpenter work can bring the cost down, perhaps, to 75 cents per bird. Good matched lumber (second grade) is more expensive than rough boards battened, but the boards are likely to crack. A cement floor is more expensive than one of dirt but is more satisfactory. It would hardly be safe in planning to allow less than \$1 per bird, but the cost might fall considerably below that figure.

The cheapest henhouse is the square house, and the unit, for egg-farm purposes, is a house which will hold 50 hens. Some poultrymen put more than this number in one house, but 50 hens as a rule is as small a number as can be housed economically together and as large a number as will do well. Three square feet of floor space should be allowed for Leghorns and about four for heavy hens. Since lumber comes in 12, 14 or 16-foot lengths, it will be cheapest to make the house either 12 or 14 feet square.

A long laying-house for 1200 Leghorns could be made of 20 of these houses or units, each 12 by 14; in other words, the house would be 280 feet long and 12 feet wide, but would be divided into 20 roosting apartments, each containing about 50 hens. The different apartments are connected by doors or doorways, so that every hen may range over the whole 280 feet. The roosts, which are all on the same level (about 2½ feet from the floor), are at the rear of the roosting

house, with a dropping board beneath, so that the floor may be covered with straw and the hens have plenty of room to scratch in in wet weather. Feed bins and hoppers or troughs are built into the front of the house so that all may be under cover. The front of the house is open.

Since a shed roof is the cheapest, this house has a shed roof seven feet high in front and 5½ at the rear. Rough boards covered with roofing paper make a very satisfactory roof, but it is little cheaper than shingles, and it is hard to say which is tighter. Whatever material is used, the roof must be made tight, however, for a leaky henhouse roof, even in "Sunny California" is a delusion.

The arrangement of the runs is a matter of taste and opinion. Some laying houses are built with very small yards, some with large ones, some with none at all. The best plan would seem to be two large yards, one extending the entire length of the house in front, and the other at the rear, with doors at the rear so that the hens can be turned into one yard while a green crop is grown in the other.

But it is not necessary to use the long house, though this is more economical of lumber and of labor in caring for the flock. With the large acreage this lady has, she might find it better to use colony houses, each containing accommodations for from 30 to 50 hens, and to give each house more yard room. This plan is rather more laborious for the caretaker, since it involves a good deal of walking and requires more fencing, but it makes it possible to use more land for forage crops and let the hens do the harvesting themselves. By giving each house two large yards the hens could be given green runs at all seasons, and this is a tremendous advantage. It is said that the splendid laying at the Australian egg-laying contest has been due largely to the green runs on which the hens were kept. The colony houses used when this system is employed are usually smaller than the 50-hen apartments of the long house. A house eight by ten is a very good size and holds 25 hens, but there is no reason why the houses should not be larger, unless they are portable. I doubt whether a flock of 1200 birds could be profitably housed in this way, but for a farm flock of heavy hens it is an excellent method.

Questions

THE EDITOR



and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Castor Beans

We have often answered inquiries in regard to castor beans that their production for the purpose of making oil could hardly be profitable with labor conditions as they are at present in California. We recently asked Dr. Snowden for his opinion in this connection and he replies that there is a possible opening. He writes:

"I believe from what I have seen of individual plants and their performance without cultivation or care that the industry can be made a profitable one here, going into it at first of course on a small scale and branching out as the demand warranted it. One ought to be able to harvest a large

quantity of the beans in a day by clipping the bunches and after drying threshing them out on a floor."

Fleas

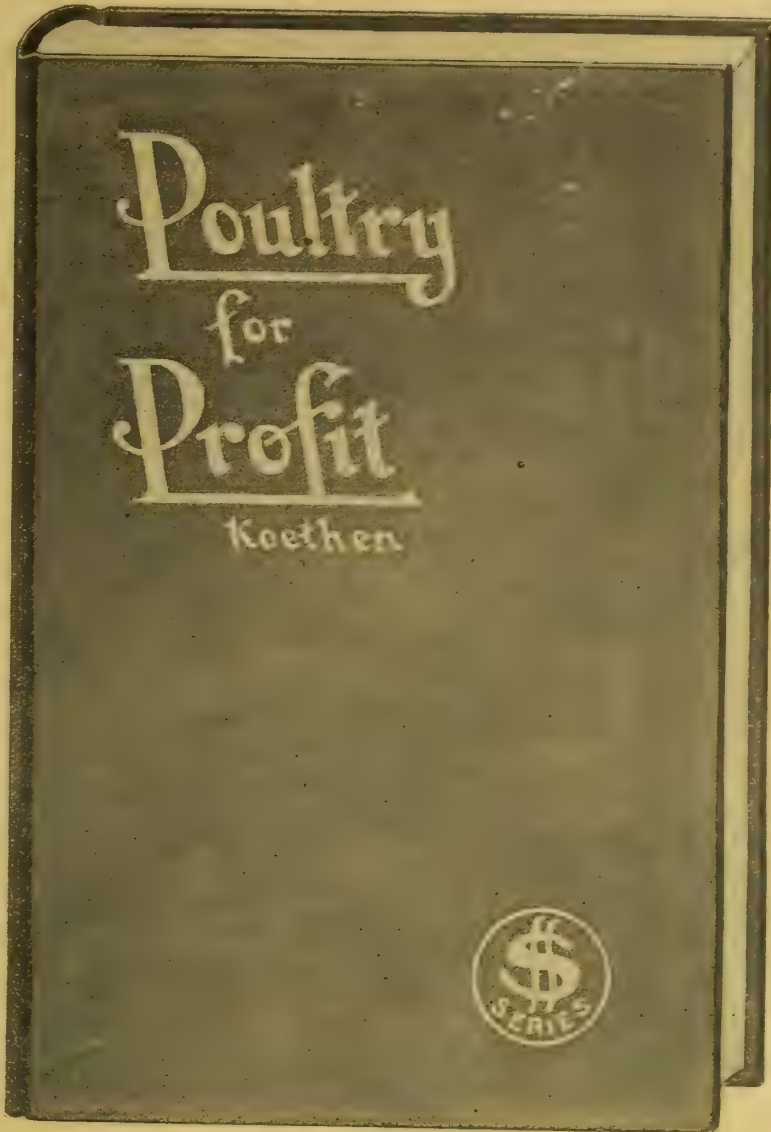
Fleas are a great pest this summer on our ranch, the men bringing them into the house on their clothes from the barns and corrals. I have been led to believe that where hogs are kept fleas are an inevitable evil. Is this so? The hogs have a wide range, some of the young ones sleep around one of the barns and are fed once a day in a corral.—M. A. B.

The best way to rid a place of fleas is by the liberal use of water. Dry dust which contains a quantity of decaying wood is often found underneath buildings and this encourages the increase of the flea pest. The eggs are scattered from the bodies of dogs and cats over the floors and in the

to make the

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requires a thorough knowledge and practice of the many details connected with Poultry Raising.



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by

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115-117 N. Broadway

Los Angeles, Cal.

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Prices Reduced—Ganter and Harmon Avocados, 4 to 7 ft., extra fine field grown trees with large, even heads; on rented ground and must be sold. Our prices will surprise you. Citrus also reduced. Magnolia Nursery, Whittier, Cal.

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For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holbe, Fullerton, Cal.

Avocado Buds—Challenge, \$10.00 hundred; Royal, Walker's Prolific, \$5.00; Taft, Harmon, Ganter, Northrup, \$2.00. C. E. Utt, Tustin, Cal.

Nurseriesmen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

MACHINERY

USED RANCH MACHINERY, PUMPS, WINDMILLS, TANKS, ENGINES, HAY MACHINERY, PUMPING PLANTS, TANKS, TANKS, TANKS.

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For Sale—One 15 H. P. Western gas engine in good condition with fuel tank, all necessary pipe and fittings, batteries, etc. Also one Gould and one Price No. 4 horizontal centrifugal pumps. Cheap. Hugh T. Thomson, Orange, Cal.

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Just Out—The Cultivator Poultry Book. "Poultry for Profit," by Jean A. Koethen. Published by the Cultivator Publishing Co. Highly endorsed by experts. Over 200 pages, 50 illustrations. Contains simple methods of avoiding and overcoming difficulties. A guide to poultry success under Western conditions. It tells what to do, why to do it, and how to do it. Nicely bound in cloth. Price \$1.00 postpaid, or with Cultivator one year, \$1.75. Send orders to Cultivator Publishing Co., 115-117 North Broadway, Los Angeles, Cal.

Baby Chicks—Rhode Island Reds and White Leghorns. My guarantee safe arrival, full count, strong, vigorous; fine bred chicks, Leghorns, \$3.00 per 100. Will lay in five months. Reds, \$11.00 per 100. Will lay in six months. J. W. Lyon, Gardena, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

Baby Chicks—Electric Hatched. White Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. We are booking orders for Fall and Spring delivery. THE ORLAND HATCHERY, Orland, Glenn Co., Calif.

We can supply you with March hatched S. C. White Leghorn cockerels from champion layers. Every hen on the ranch traped. Our aim—full value, quality and satisfaction. \$1 and \$1.25 each. Hudson Bros., Escondido, Cal.

First-Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeye Hatchery, Turlock, Cal.

MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth \$10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how \$100 grows to \$2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 23 W. Jackson Blvd., Chicago.

By having no expensive catalogue we can sell direct to you through our merchandise sales department standard lines of diamonds, watches, jewelry, tools, implements, hardware, sporting goods, etc., at money saving prices. Write us as fully as you can as to just what you want, and we will send full description, and prices that will interest you. Address Newton Poultry Farm, Dept. B, Los Gatos, Calif.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

Cedar Posts—Split from Washington Red Cedar. Get our prices before buying. G. R. Kirk Co., Tacoma, Wash.

MUSICAL INSTRUMENTS

Special Piano Offer to country buyers, for a short time only. Any piano or player piano at \$100.00 special discount. Ten different standard makes, styles and finishes to select from. Act quick. Address GIRARD PIANO COMPANY, 517-519 14th St., Oakland, Cal. Established 1873.

We repair, buy, sell and exchange musical instruments; used instruments, good as new, sold cheap. Write for bargain list. Bolander's Fiddle Hospital, 52 Second street, San Francisco.

KODAK FINISHING

Developing, 10c per roll. Printing, 2 1/4 x 3 1/4, 2 1/2 x 3 1/2, 3 1/4 x 4 1/4, 3c; 3 1/2 x 5 1/2, 4c. Denver Store, 706 S. Hill St., Los Angeles.

LIVE STOCK

I have another crop of seventy-five head of BIG TYPE POLAND CHINA BOARS, born in February, sired by IOWA WONDER, who is a son of A WONDER, the GREATEST POLAND CHINA BOAR, LIVING OR DEAD. IOWA WONDER is in the 1000-LB. CLASS. One of his sons from one of my good registered sows should make YOU MONEY. I will sell the best first. On account of being overstocked will sell them at \$20 each while they last, but they will not last long at this price, so ACT QUICK if you want an EXTRA GOOD BOAR FOR LITTLE MONEY. Geo. A. Smith, Corcoran, Cal.

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For Sale—12 head of full-blooded Ayrshires for sale. A fine foundation herd for anyone desiring to start in the registered dairy cow business. Contains some of the best blood to be had at any price. For particulars address Moorland Farms, Susanville, Calif.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Beeding. BERKSHIRE HOGS. Finest Lard in the state. All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

Cholera Immune Berkshire Pigs—All ages. Registered Holstein bull, Prairie Pieterje 107062, three years old—gentle and guaranteed. Selling to avoid inbreeding—\$300.00. Ricconi Bros., Mountain View.

For Sale—Registered, Berkshires. 25 choice pigs of best breeding from the best strains in America. For prices and description address H. L. Murphy, Perkins, Sacramento Co., Cal.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Novato, Cal.

Thoroughbred Berkshire and Tamworth Hogs for Sale—Western Hog Company, formed by staff of Newmark Grain Co., Los Angeles. Ranch at Elsinore.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Hogs—A few thoroughbred Hampshire Boars for sale. Reasonable prices. L. P. Conway, P. O. address, Sawtelle, Calif. Sunset Phone, Santa Monica 565-M.

Poland Chinas—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

Glennview Poland China—Stock for sale. Chas R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Thoroughbred Duroc Jersey Boars and Gilts, strong and vigorous stock. Fred Hart, Exeter, Cal.

For Sale—Prize Winning Shetland ponies. Selling out. Priced worth the money. Maurice Rucker, Fair Oaks, Cal.

Berkshires—Boar pigs for sale, Butte City Ranch, Butte City, Glenn Co., California.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

SCHOOLS AND COLLEGES

Wanted—About seventy-five young men and women to enter the WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address, WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal. 634 E. Main St.

Telegraphy—Stenography, bookkeeping, English branches. Positions guaranteed. Mackay Business College, Los Angeles.

RABBITS

Leading Rabbitry in America—Flemish Giants a specialty. Prize winning and heavy weight stock. Scored and sold on their merits. Inquiry and inspection solicited. Catalogue on request. Empire Rabbitry, Empire, Cal.

Bosworth's Imperial Red New Zealand Hares sold at hard times prices. NOTHING BETTER. Geo. M. Bosworth, Geyersville, Cal.

SEEDS AND PLANTS

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs. \$3.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co., Cal.

For Sale—Burbank Spineless Cactus, at prices you can afford to plant them for feed. Send for catalog. S. A. Moore, Huntington Beach, Calif.

DUCKS

Ducks—High class Mammoth Imperial Pekin Ducks for breeders. Best stock in California. Stone Canyon Poultry Farm, near Sawtelle, Calif. P. O. address Sawtelle. Sunset Phone, Santa Monica 565-M.

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Pedigreed Airedale Pups—\$10 to \$17.50. 635 Acacia avenue. Phone 2734-W. W. R. Whitmore, Fresno, Calif.

FARM LANDS FOR SALE

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale Cheap, residence lot 50x120, at East San Diego Villa Heights, will let it go for \$100.00; good title guaranteed; act quick. Address Box No. 43, Palermo, Calif.

For Sale or Trade—335-acre relinquishment in Coachella Valley. Fine land, 2 wells, barn, etc. Write me for particulars. A. R. Marshall, Santa Ana, Calif.

WANTED

Wanted—Job on a ranch by a rustling man, ten years' experience, good references; good irrigator and milker, first class on alfalfa culture, used to beans, grain and deciduous fruits. Might rent a place on shares where stock and machinery was furnished. Have wife and two children. H. C. Kinsman, 4019 Albatross street, San Diego, Calif.

Wanted—A man in every town to sell teas and coffees. It's a chance to get into business without cost. If \$25.00 per week means anything to you write now to C. B. Wheeler, 605 Crocker street, Los Angeles, Calif.

Wanted—To hear from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

TURKEYS

Eleven White Holland Turkey Hens and one fine tom. All mature birds and strong breeders. Excellent layers. H. McKusick, Box 733, Calexico, Cal.

sleeping places of the animals. The larva of the insect, which is of a worm-like character, lives on small particles of decaying wood or vegetable matter. We quote from Comstock's "Manual for the Study of Insects" the following:

"Of the domestic animals only the dog, cat, rabbit, pigeons, and poultry have fleas. They are most common on dogs and pigeons. But the species of fleas do not appear to be so strictly limited to particular animals as are the lice and some other parasites; for the species that commonly infests dogs and cats will also attack man without hesitation and in this country seems to be more troublesome to our race than the human flea.

"To rid a dog or cat of fleas it should be dusted with insect powder, pyrethrum, and its sleeping-place thoroughly cleaned. The bedding in kennels should be of some substance which can be replaced frequently, as shavings or straw, and when replaced the old bedding should be burned and the floors wet with kerosene emulsion or some other insecticide that will destroy the eggs and larvae.

"In regions where fleas abound much relief can be obtained by the use of rugs on floors instead of carpets. The frequent shaking of the rugs and cleaning of the floors will prevent the breeding of these pests within the house. As a single flea will inflict many bites, it often happens that a house will seem to be overrun by them when only a few are present. In such cases a careful search for and capture of the offenders will soon remedy the evil. We have found that in catching fleas greater success attends our efforts if the thumb and forefinger be wet before seizing the flea, and the insect be placed in a dish of water before we attempt to destroy it. Otherwise the insect is apt to escape while we are trying to destroy it.

"People that suffer from the attacks of these pests can also gain much relief by dusting the upper part of their stockings each morning with insect powder and by sprinkling a small quantity of this powder between the sheets of their beds at night."

Farm Name

Please suggest suitable name, Spanish or otherwise, for small ranch in Glenn County. At present it is planted to alfalfa, later will have considerable fruit. There is nothing in particular now to distinguish it from many other ranches.—Subscriber, Glenn.

The selection of an attractive farm name is a material asset to the farm, especially if one markets his own fruit and takes pride in putting up a product which will be a credit to the

name selected. We offer a list of eight names suggested by the location. Possibly one of these will appeal to the ranch owner: Glenncove, Glennbrae, Glennview, Glennarm, Glennvale, Glenn oak, Glennrosa, Glennanna.

Here also is a list recommended by the Wisconsin Farmer:

Farms which overlook lakes, valleys, streams, etc.: Lakeview, Valley View, Brook View, Lake Overlook, Lakeside, Greenview, Maple Valley, City View, Maple Grove View, Elmhill, Fairview, Grand View, River View, Overlook, Riverdale, LaBelle Lake View, White Birch View, Hillview, Pleasant Hill, Cedar View, Brookside, Brook.

Farms distinguished by groves, located on hills, etc.: Airy Knoll, Springdale, Elmgrove, Burr Oaks, Pine Grove, Sunny Slope, Rocky Ridge, Maple Lane, Pleasant Point, Royal Oaks, Oak Grove, Honeywood, Hillside, Hillcrest, Point Breeze, Hill Croft, The Alps, Prairie View, Maple Wood, Wildwood, Chicken Ridge, Elmwood, Lone Oak, The Maples, Pleasant Knoll, Long View, Rockhill, Upland, Oak Lodge.

Farms which specialize: Shamrock Holstein, Ivycrest Stock, Happy Home Chicken, Rose Lawn Poultry, Wayside Produce, Duroc Jersey, Cloverleaf Stock, Happy Hollow Stock, Oak Grove Horse, Long View Fruit, Roadside Stock, Jones' Percheron, Homewood Jersey, Fairview Guernsey, Greenview Stock, Meadow Lawn Dairy, Spring Hurst Swine, Ideal Dairy Farm.

General farm names: Elderberry Park, The Everglades, Home View, Park, Pinehurst, Bellemont, Pleasant View, Prosperity, Evergreen, One Mile, Fairview, Pilsen, Allswell, Golden Prairie, Fern Dell, Homeland, Cedar Lodge, Rosendale, Fair Acres, Honeysuckle Park, Cloverdale View, Plain View, Edgewood, Daisy, Clover Nook, Clover Heights, Quietdale, Sweet Brier, Waveland, LaBelle.

Grafting Apple and Loquat

I have a vigorous Bellflower apple tree that bears not more than a half dozen apples each year; also a flourishing large loquat that produces large crop of very small fruit. Would you advise grafting two or more different apples on the apple tree and a better variety on the loquat? When should it be done?—Subscriber, Pasadena.

You do not say how old your apple tree is. If it is still making a vigorous growth, it is not likely to bear much fruit. After it has finished its rampant growth, no doubt it will begin to bear. Bellflower trees always bore well at Pomona. If your tree does not improve with age, graft it over to some other variety or two or more varieties. White Winter Pearmain, Missouri Pippin and Red Astrachan will give you a continual crop of good apples through early summer till late fall. Yes, graft over loquat to Advance.—J. W. M.

Apples should be grafted when trees are dormant just before beginning of growth in spring.

Strychnine for Squirrels

I note in your issue of July 1 a request for information regarding the amount of strychnine to use in poisoning squirrels. Doubtless other methods may be as good, but having had good results with the following I can recommend it.

About sun-up I make the rounds of the runways and holes and cut oranges in halves and place them in prominent places in slight depressions in an upright position, so that the juice will not run off. Then I go around with my strychnine bottle and a toothpick or splinter of wood and after wetting the end of it place it in the bottle and put as much of the poison on one side of the center of the orange as sticks to the wet end of the toothpick. A similar dose is placed on the opposite side of the orange. When I am through I take pains to destroy the toothpick and to wash my hands and knife. I find the strychnine crystals much more effective than the powdered form. At this time of the year the squirrels are very apt to just stick the poisoned grain in their cheek pouches and walk home with it and put it away for a rainy day, while the orange must be eaten or left. Those oranges placed early in the day were most effective.—Joseph Dixon, Escondido.

Veterinary Queries



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Cowpox

What ails my cow's teats? They first appear to be sunburned, then small blistered sores come and enlarge until the teat is all raw. They heal but the trouble returns and we can only get the milk by using a milk tube. Can you suggest a remedy?—Subscriber, Rio Bravo.

The trouble is probably cowpox. The disease may be carried from one cow to another on the hands of the milker. Wash the hands before milking each cow and bathe the teats after each milking with a solution of hyposulphite of soda, one ounce to the quart of water. If the skin is inclined to crack when healing apply an ointment made of two parts mutton tallow, two parts lard and one part of dry white lead or oxide of zinc.

Wire Injury

Have a colt one year old that at the age of two months got its leg fast in a hog wire fence and was cut badly from ankle to hock. After a week's care it was so much improved that it was turned out with the mother to graze and next morning was found with the leg broken. It was given some care but did not do well and was given to me. It is improved now so it will put some weight on the foot but the leg will not heal and stay healed. One abscess heals up and another breaks out.—Subscriber, San Diego.

Since you have stuck to it so long and the colt shows some improvement it may be well to continue a little longer. Try injecting into all the openings a solution of permanganate of potash, one half dram to the quart of water. Wash out the openings with warm water and be sure to inject the solution to the bottom of the cavity. Repeat once a day while any pus shows but when it is inclined to dry up let it alone so it will have a chance to heal.

Swollen Udder of Calf

Have a calf about four months old that first swelled in one of her hind teats and it later spread to the front one. Now one side of the bag is swollen, hard, and feverish and seems to be very sore. What is best to do?—Subscriber, Bachelor.

Such swellings are usually due to the parts being punctured by a sliver, possibly a piece broken off inside. Whatever is causing the swelling, it will probably form an abscess and will have to be opened. There is danger of it ruining the udder and you may have to fatten her for beef.

Skin Trouble

My five-year-old horse has had more or less trouble for two years with itching skin. The veterinary pronounces it due to the condition of the blood but his treatment fails to give relief. Have tried remedies for lice or external troubles, but with no results. There are small lumps on the neck and shoulders and along the back. The hair comes off the lumps. The horse rubs against everything and is especially uncomfortable after working. He is a greedy eater and on hot days is short of breath as if suffering from the heaves. His manure is not in round balls as should be but is in a solid mass and the passages are too frequent.—Subscriber, Hemet.

The bowels being continually out of condition would indicate that at least part of the irritation of the skin is due to internal troubles. Dissolve one pound of Glauber's salts in a quart of hot water. When cool give as a drench. Follow this in three or four days by giving aloin, two drams, turpentine, two ounces, and raw linseed oil, one pint. After this, half an ounce of Fowler's solution of arsenic once a day for three or four weeks can do no harm. A handful of ground flax-

seed in the feed once a day will offset the constipating tendency that the Fowler's solution might have. Would also treat the skin by scrubbing it well with warm water containing two ounces of sal-soda to the gallon. Rinse with clear water. When dry rub in plenty of engine oil. Use a light grade and if you have it, add one ounce of zenoleum to the quart. The trouble having continued so long it may be two or three weeks before you see much improvement.

Chorea or Epilepsy

Can you tell what is wrong with my horse?

He will hold his head to one side and twist it around nearly to his shoulder. Sometimes it looks as though he would fall down. He slobbers a great deal and is nervous. These spells last for a week or two at a time and then it may be two or three weeks before they recur. When the trouble is coming on he holds his head high up to one side and partially opens his mouth. Would like to know what it is and what to do for it.—Subscriber, Yermo.

This is probably a form of chorea or epilepsy. Loco poisoning or a small abscess on the brain would cause some of the symptoms that you describe but they would not last so long nor be intermittent.

Very little can be done for this trouble. You might try giving half an ounce of bromide of potash in the drinking water morning and evening for a few days when you see symptoms of the trouble returning.

NURSERYMEN'S CONVENTIONS

The Pacific Coast Association of Nurserymen will hold its convention sessions in the new Auditorium building at San Francisco, August 12-14. Monday, August 16, will be Nurserymen's day at the Exposition. Local florists have arranged a display at Golden Gate Park during the visit of the nurserymen.

The morning of Thursday will be given to reports of committees and general business. In the afternoon there will be an address by the president, John Vallance; Uniform Horticultural Laws, M. McDonald; Recent Horticultural Legislation, Dr. A. J. Cook; Experiments With Crown Gall, Prof. H. S. Jackson; Quality vs. Quantity and a Wider Distribution, J. B. Pilkington; Reminiscences Concerning Nurserymen and Nursery Interests, E. J. Wickson.

Friday—Valuable Information About Ornamental Plants, Prof. J. W. Gregg; Methods of Propagating Prune Trees, S. A. Miller; Preventing the Importation of Insect Enemies, Frederick Maskew; Cost of Growing Ornamental Stock, John Armstrong; Seedlings and Stock Grown in America, M. J. Crow; The Walnut Industry, Almon Wheeler; Best Paying Shipping Plums, J. E. Bergholdt; The New Roses, John Gill.

The secretary of the association is C. A. Tonnesen. He may be addressed, Box 1604, Tacoma, Washington.

In conjunction with the convention of the Pacific Coast Nurserymen, which is their thirteenth annual, the California Nurserymen will also hold their fifth annual meet at the same time and place.

The program of the California Nurserymen begins on Friday afternoon with an address by President Fred H. Howard. Reports, appointment of committees and general business take up the rest of the afternoon. On Saturday morning beginning at nine o'clock will be given the following addresses: "The Department Store and the Nursery Industry," By Ernest Braunton; "Recent Rulings in re Shipping Plants by Parcels Post," D. W. Coolidge; "The Crime of Being a Nurseryman," W. D. Somerville; Saturday Afternoon: 1:15—"Why Import What We Can Grow on this Coast?," M. McDonald; "Do We Need New Varieties of Commercial Fruits?," E. J. Wickson; "A Publisher's Suggestions to Nurserymen," Frank Honeywell; "For the Good of the Association." A general expression of opinions and suggestions is invited from the floor for the betterment of the organization, and the uplift of the nursery business.

The secretary of the California Association of Nurserymen is H. W. Kruckeberg, 237 Franklin Street, Los Angeles.



Legal Queries

Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Partnership Pumping Plant

A sold to B two-fifths of his farm, and also sold a two-fifths interest in a pumping plant, retaining three-fifths. No water contract was made other than in the contract for sale, each party agreeing to pay his share of operating and repairing the plant. Now B claims that A should pay three-fifths of the expense of fuel and repairs regardless of the amount of water received by A. A claims that each should pay according to the amount of use by each. Who is right? Has A any more right to say who should repair pumping plant than B? If pumping plant was unsatisfactory or worn out, could A put in new plant without the consent of B and charge two-fifths of expense to B?—Subscriber.

The two parties stand in relation to each other of tenants in common. The one is entitled to contribution from the other for expenditures absolutely necessary for the benefit and preservation of the common property; that is, for the proportion of the reasonable expense fairly and in good faith incurred. One co-tenant is not ordinarily responsible for costs of improvement or repairs upon the common property unless he agreed or ratified the making thereof or unless it is shown that the improvements or repairs were absolutely necessary to the enjoyment or preservation of the property. Where expenditures are not for the common benefit of the common

estate there is no contribution. In order that the tenant in common should recover contribution for necessary repairs, he should give reasonable notice to the other. It would seem that inasmuch as B is entitled to three-fifths of the pumping plant and water running therefrom he should be obliged to pay three-fifths of the necessary expenses and repairs, as it is entirely optional with him if he chooses to take less water than that to which he is entitled; in other words, he may claim his full three-fifths water and dispose of it as he may desire, but he cannot throw the burden on the other party merely because he desires to take less.

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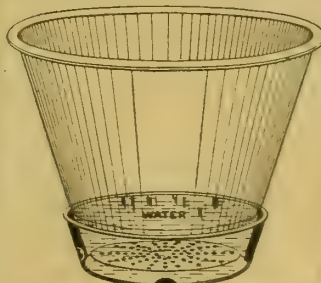
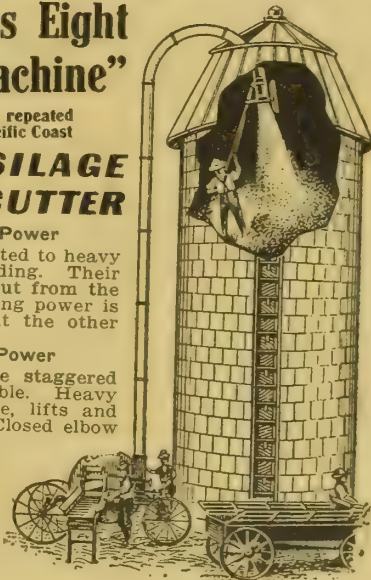
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NOTE—Don't wait for this adv. to appear again

Pat. Nov. 10, 1914, No. 1,116,543

Orange Custard

A Tasty Dessert Peculiarly Appropriate to California

In California, the great orange state of the country, every housekeeper should be familiar with many recipes utilizing the delicious golden fruit in various forms. One of the most tasty dishes of this character is orange custard—a simple recipe for which is as follows:

One pint milk scalded; yolk of 2 eggs; 1 tablespoon cornstarch; sugar to taste. Mix eggs, sugar and cornstarch and pour the hot milk on slowly. Cook over water, stirring constantly till it thickens. Cool. Slice 4 oranges and arrange in a serving dish with layers of sugar. Pour the custard over the whole.

Try this recipe once and you will always preserve it for future reference.

In all recipes involving the use of cornstarch, it is important that a good quality be used in order to obtain satisfactory results. Housekeepers in all parts of the country who have the best success with cornstarch recipes invariably depend upon the famous Kingsford's brand.

Kingsford's cornstarch can be obtained at all modern grocers and costs no more than ordinary kinds. Insist upon Kingsford's and ask your grocer for the little Corn Products Cook Book, which contains the above and hundreds of other delicious cornstarch recipes.



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THE ICE-CART

By Wilfred Wilson Gibson in Century

Perched on my city office stool, I watched with envy, while a cool And lucky carter handled ice— And I was wandering in a trice

Far from the gray and grimy heat Of that intolerable street, O'er sapphire berg and emerald floe, Beneath the still, cold ruby glow Of everlasting polar night, Bewildered by the queer half-light, Until I stumbled, unawares, Upon a creek where big white bears Plunged headlong down with flourished heels

And floundered after shining seals Through shivering seas of blinding blue.

And as I watched them, ere I knew, I'd stripped, and I was swimming, too,

Among the seal-pack, young and hale, And thrusting on with threshing tail, With twist and twirl and sudden leap Through crackling ice and salty deep, Diving and doubling with my kind, Until at last we left behind Those big, white, floundering bulks of death,

And lay, at length, with panting breath

Upon a far, untraveled floe, Beneath a gentle drift of snow— Snow drifting gently, fine and white, Out of the endless polar night, Falling and falling evermore Upon the far, untraveled shore, Till I was buried fathoms deep Beneath that cold white drifting sleep—

Sleep drifting deep, Deep drifting sleep—

The carter cracked a sudden whip; I clutched my stool with startled grip, Awakening to the grimy heat Of the intolerable street.

A \$3,000 BIRD

Solomon, or Roosevelt or somebody said, quite a period before the present tariff bill was passed, that speech was silver and silence golden. Now that is all wrong. Speech has a value that is sometimes considerably better than a dollar a word; and this is no reflection on any member of the president's cabinet.

Why, I've got a parrot with a vocabulary worth just \$3,000 and I mention that sum because it is all I have saved since my marriage. It isn't a pedigreed parrot. It doesn't lay Indian Runner duck eggs or any of those fancy breeds which the poultry journals assured us worth \$20 a sitting. In fact that parrot looked so ancient and motheaten that a peddler sold it to my wife for \$1.75 marked down from \$2. She always falls for a bargain.

Yet that parrot could talk a torrent that would put a British militant sufferage out of commission. She and my wife—when nothing better offered—would take their knitting and spend a whole afternoon trying to see who could have the last word.

From the first it was my opinion that my wife got stung on the parrot—the phrase has no kin to the man who was hit in the dining room or the woman who was bitten in the parlor—but you couldn't persuade Molly of this. Even when the bird repeated before company a choice remark I had indulged in when I sat down on a sheet of fly paper that had been laid on a chair by one of the children, and when one Sunday morning as Polly hung on the front porch and all the neighbors were basking in the sunshine, she shouted that Mrs. Ellis was over-dressed and that her new green suit was a sight—a bit of gossip my wife had imprudently indulged in concerning her next door acquaintance—even then Molly's affection for the creature did not lessen one whit.

When at the end of my patience I suggested that we must get rid of the bird, we had an argument that

put the Lincoln-Douglas debate in the shade, and a week later we continued where we had left off. To be serious, something had to be done and I tried to bring Molly to a reasonable view of the situation. The neighbors were certainly annoyed at the continual cackling issuing from our place and within the house there was not a minute's peace. Besides, I argued, the bird was getting old and it would be only humane that we help it get its boat over Jordan's water. But Molly was obstinate. Polly's garrulousness was a sure indication that she enjoyed life and it would be time enough to talk of humaneness when Polly began shedding a feather or two and showing symptoms of failing eyesight, Molly claimed. Very well. From that moment I took matters into my own hands.

Something had to be done and it was plain that I was elected to do it. One night when Molly had gone to bed with a headache I set the bird's cage in an open window, wired back the door of her domain and crept upstairs like a thief in the night. The next morning Polly's voice greeted me with the words, "George, you're a great sinner, you are," and there she sat, snug and sound on her perch, a devil-may-care twinkle in her green eyes. The next day I accidentally dropped the cage into a barrel of rain water, but the door worked loose and she came up shouting a choice bit of profanity which it is just as well not to mention. So after several other futile attempts to get rid of the talking machine I decided to resort to deep strategy. In short, I resolved to poison the creature.

It was not without a battle with myself that I came to this decision. My mind made up, there was no backing down. I hit upon the scheme of introducing a small portion of morphine on a quarter of an apple—a fruit the parrot generally devoured with an appetite equal to that of the fat lady at the circus. This course I thought would serve to introduce the bird to Charon and get a boat ride across the Styx.

I procured the morphine from a nearby druggist and one evening after supper when Molly was putting the children to bed I cut up an apple, sliced off a quarter, introduced the morphine in the form of powder, and wedged the fruit between two of the wires of Polly's cage.

The parrot gazed at me with suspicion and drew off into one corner where she could speculate upon my unusual conduct. I supposed she recalled that I had never invited her to dinner before—which was very true. I wanted to stay and watch the bird devour the bait but the swishing of skirts warned me that Molly was returning and I beat a hasty retreat. Even then I was not sure that she had not seen me but as she said nothing, I knew I had gotten away safely. Ten minutes later when I chanced to pass through the room, lo and behold the apple was conspicuous by its absence and Polly was blinking laboriously on her swing, wagging a valiant battle against the attacks of the sand man.

That night I slept soundly, peacefully. And then very suddenly I awoke and found myself sitting upright in bed listening. Something had disturbed me. In a second I knew what it was. Polly was cackling away lustily downstairs. I couldn't believe my ears. By this time the bird should have been well on her way in Tartarus, should have paid her toll to Charon and had her little boat ride across the Styx and should be viewing the sights on the devil's midway. But here she was, talking excitedly. While I was trying to decide just what was the cause of the bird's loquaciousness, I caught another sound. I needed no other cue for action.

I leaped from my bed, snatched my pistol from beneath my pillow and started downstairs at great speed.

I descended the flight as an Englishman rides horseback—by keeping in the air most of the time and merely touching a step now and then. Anyone following me would have seen nothing but a streak of pajamas flying through chaos and I think many would have doubted that there was a human occupant in them. Hermes with his winged sandals could not have made better time than I.

Before I was half way down I could hear distinctly the words Polly was employing in her oration. "Who are you? What do you want?" She was demanding over and over again—a little piece of vocabulary I had once taught her on an occasion of a book agent presenting himself at our door.

When I reached the last step there came a violent scuffling of feet mingled with excited ejaculations in a man's voice and as I burst into the room two huge filmy figures threw themselves through an open window and were swallowed up in the darkness. I went weak, dizzy, faint at the thought of our money—the money which I would never entrust to local banks—the \$3,000 tucked away so securely in my little safe.

In less time than it takes to tell, I switched on the lights and rushed to the corner. The safe had been drilled in so many places that it looked like a stove burner or a patent shower bath, but the doors still held firm. I went at the combination and in a few seconds I had the safe open. The fortune was there! The world was still ours!

Then I came to the realization of the fact that the parrot had saved the money. I just wanted to fall on that bird's neck and weep in sheer gratitude. "O. you bird," I shouted and then stood stock still in amazement. The parrot was dying before my very eyes! It had done me that last good turn after I had poisoned it! Then and there I made up my mind that I'd save that bird if it took the whole \$3,000 in fees for medical experts and I ran over three chairs and a table to the library and got down our \$2.85 doctor's book.

I consulted the index for the word "Poisons," found it after I had run up and down the page and missed it a dozen times. There they were all listed, seemingly every one but the one I wanted. But at last I came to "Opium and Morphine." This is what our doctor's book said about morphine:

"Prevent the patient from going to sleep. Give ammonia by inhalation and keep the patient aroused by dashing cold water in the face or making the patient walk to and fro. Administer tannin or strong coffee and in extreme cases resort to artificial respiration. One one-hundredth of a grain of atropia should be given hypodermically. Stimulants may be necessary. Efforts should not be relaxed until the patient is out of danger or as long as life remains."

Well, I performed all the directions that were performable. There was some black coffee in the pot and I poured out a cup of this and procured an eye dropper to administer the same. I got the ammonia bottle from the cupboard. Then I opened the door of Polly's cage and cautiously inserted my hand. All went well until my fingers closed over the back. Then the bird came to and for an animal full of several grains of morphine I never saw such action in my life. She went at my hand as a woodpecker goes after a tree and in three seconds my hand felt as though it had been run through a meat grinder. But I persisted and pursued the bird relentlessly. She did several kinds of tangoes about her cage, fighting furiously the while, but in the end I mastered her and brought her out to the kitchen table. Then I thrust the ammonia bottle under her beak and she put up another battle that had Mr. Jeffries beaten to a standstill. After she had recuperated I started after her with the eye dropper full of coffee but this proved so impossible after the first attempt that I abandoned it and contented myself and Polly by poking her head right down into the cup. She came up gamier than before and we did the third round of the struggle, both going to our corners at the end of it a bit groggy. There was one consolation in this whole bit of ludicrous procedure—ludicrous now,

but dead serious then—I was at least keeping the parrot awake.

At this pretty little crisis in the game Molly herself walked in upon me. I stood there and grinned at her—you know the sickening grin a fellow gives in such predicaments. I felt about as comfortable as a man seating himself in the electric chair.

Molly started at me and then came the inevitable question. "For heaven's sake, what are you doing?"

I did some more grins and tried my best to swallow my Adam's apple. The one little effort I made at speech brought forth such a funny sound from my throat that I checked the noise and remained silent.

But she asked the question again—you can't get away from answering a woman.

"We were nearly robbed—Polly talked and awoke me and I got down in time to frighten the burglars away before they had gotten our money. Just look at the safe, how they drilled it," and I pointed almost in pride at my safe.

But Molly's eyes never left mine, which little trick didn't ease my spirits one whit. She came over and took the bird from my hands—and I noticed she didn't attempt to mistake Molly's fingers for a steak, as she had mine, and she put her back into the cage.

"Well, my dear husband, let this be a lesson to you. You don't need to confess; I can guess the rest. When I came downstairs from putting the children to bed I caught a glimpse of your coat tails getting out of the room. I knew you'd been up to some deviltry. I noticed the apple in Polly's cage. I didn't think you'd go so far as to attempt to poison the poor innocent creature, but as you had never been known to feed the parrot before, to be on the safe side I removed the apple before she had touched a morsel of it."

The lump in my throat suddenly exploded into nothing and my heart which had been wandering all over my insides during the last half hour slipped into its proper socket with a jolt—Successful Farming.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Baked Halves of Peaches
Eggs Baked in Cream
Corn Meal Rolls
Coffee

Lunch or Supper

Salmon Mold
French Fried Potatoes
Lettuce Cocktail
Peach Shortcake
Cheese Biscuits
Tea or Milk

A Delicious Jam

Try the Following Recipe This
Preserving Season

One of the most favored treats with the little folks and many grown folks is bread and jam. This being the season of the year when jam making is in progress all over California, the following simple recipe should be clipped by every woman for ready reference:

One pound fruit; ½ pound sugar; ¼ pound good corn syrup. Time: One to two hours or until fruit drops heavily from spoon. Wash fruit, pare and core if necessary. Mash berries, currants, and gooseberries; slice other fruits. Place fruit in layers with sugar and stand long enough to extract some of the fruit juice. If dry a cup of water may be added. Heat slowly and cook till thick. Jam may be tested on a cold plate in the same way that jellies are tested. Stir frequently to prevent burning. Turn into sterilized glass and seal like jelly.

To obtain the best results with this recipe, the use of the brand of syrup known as Karo (Crystal White) is recommended. In fact, this syrup can be used in all your preserving in place of all sugar.

If you have never used Karo (Crystal White) syrup, do so this season. It can be obtained at all modern grocers.

Dinner

Panned Chicken, Browned Sweet Potatoes
Roast Green Corn Lima Beans
Tomatoes, French Dressing
Chocolate Pie Coffee.

Cornmeal Rolls

One and one-fourth cups flour, two tablespoons shortening, one egg, one-half cup milk, one tablespoon sugar, one-half teaspoon salt, three-fourths cup cornmeal, four teaspoons baking powder. Sift together flour, cornmeal, salt, baking powder and sugar. Rub in shortening with finger tips, then add egg well beaten and milk. Roll out, cut into rounds with a large cutter, brush over with melted shortening, fold over as for Parker-house rolls, brush tops with beaten egg or milk and bake in hot oven ten minutes. This recipe makes 15 rolls.

Salmon Loaf

One can Alaska Red or Sockeye salmon, one cup cracker crumbs, rolled very fine; one egg, one tablespoon melted butter. Season to suit taste. Pick out all skin and bone from the salmon and stir until there are no large pieces. Add cracker, egg and seasoning and stir all together. Stir in the melted butter and add cold water enough to make quite moist. Put in bag or form in shape of loaf and roll tightly in damp cloth. Steam one and one-fourth hours. Remove cloth. After the loaf is cold slice and serve as you would cold meat, with lemon or salad dressing if desired.

Lettuce Cocktail

One crisp head of lettuce, four tablespoons tomato catsup, two tablespoons olive oil, two tablespoons Worcestershire sauce, four hard-cooked eggs, four tablespoons vinegar, three tablespoons sugar, four small onions, salt to taste. Shred lettuce and cut eggs and onions up rather fine. To the olive oil add tomato catsup, Worcestershire sauce, sugar, vinegar and salt. Pour over lettuce, eggs and onions. Serve very cold in cocktail glasses.

Cheese Biscuits

Four teaspoons flour, six tablespoons grated Parmesan cheese, three tablespoons shortening, one yolk of egg, two teaspoons cold water, salt and paprika to taste. Mix flour and cheese; add salt and paprika. Rub in shortening lightly. Mix yolk of egg with water, add enough of these to mix flour, etc., to stiff paste. Knead till smooth on floured board, then roll out thin and cut into biscuits. Bake in quick oven eight to ten minutes, watching carefully to prevent burning. These are good warmed over.

Chocolate Cream Pie

Two squares chocolate, one-fourth cup cornstarch or flour, one teaspoon butter, one pint milk, two egg whites, one-half cup sugar, three egg yolks, one-fourth teaspoon salt and one teaspoon salt and one teaspoon or less of vanilla, according to strength. Melt chocolate, add sugar, cornstarch, egg yolks, salt, butter and milk. Cook in double boiler till thick, stirring constantly; flavor. Pour into a baked pie crust shell, cover with meringue made by beating the two egg whites until stiff and adding two tablespoons sugar. Brown in oven and serve cold.

HOUSEHOLD QUERIES

Roselle Jelly

Please give recipe for roselle jelly.—Subscriber, Downey.

In preparing take the pod of roselle between the thumb and forefinger of the left hand, thumb end up; cut off the stem and the basal end of the calyx to where the seed pod is united with the calyx, when a slight pressure with the fingers holding the pod will force out the seed pod. The calyx may then be used for making sauce, jam, and transparent, bright red jelly. Although we have had no experience in the making of roselle jelly, the process is said to be the same as that followed in the making of currant jelly, a tried recipe for which follows: Wash fruit, drain, place in receptacle in which it is to be cooked and mash. Pour on a small quantity of hot water and cook until slightly softened. Remove from fire to jelly bag and press out the juice. Measure the juice, return to fire and allow to boil stead-

ily for 20 minutes. In the meantime for each cup of juice measure three-fourths of a cup of sugar. Place this in a moderately hot oven and allow to become well warmed through. At the end of the 20 minutes' boiling of the juice add the hot sugar, allow to boil up well, and pour at once into glasses. When cool pour melted paraffin over the tops of the glasses, tie up and store in dry, cool place.

CANTALOUPE BUTTER

In last week's Cultivator Adviser James A. Armstrong of Maricopa County, Arizona, asked if readers had ever tried cantaloupe butter. That question caused readers to ask Mr. Armstrong how to make cantaloupe butter. This question he turned over to Mrs. Armstrong, and we are glad to give her recipe this week:

Select ripe melons, slice them and remove rinds, seeds and soft parts. Place the melon in a preserving kettle with a little water and boil until tender. Press it through a colander and measure the pulp; add one-half cup of sugar, the juice of one-half lemon and a very little cinnamon to each quart of pulp. Continue to boil it until it is the consistency of apple butter. Pour into jars and seal while hot.

Ants Doomed

A Discovery Which Means the End of This Annoying Insect

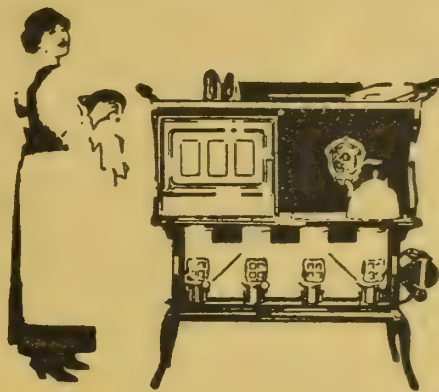
If you told the average housewife that there was no need to suffer longer from ants, she would look upon you as an inexperienced dreamer who had never come in contact with the ant pest in a practical way.

However, the fact remains that the ant is doomed. Although hundreds of remedies have failed, one has at last been devised that spells the finish of the ant.

A baker and candymaker in Los Angeles was almost driven out of business by a terrible scourge of ants, which overran the entire place. Driven desperate by the annoyance, after much experimenting, he devised a simple paste which rid his entire shop of the plague in one day.

So successful did it prove that it was decided to place it upon the market for general use, and a large factory is now required to produce it in the immense quantities necessary.

This little remedy is known as Kellogg's Ant Paste and can be obtained at all modern druggists or grocers. Try it once.



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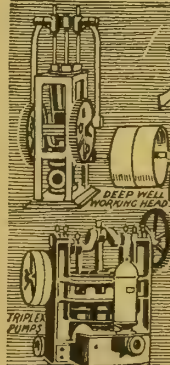
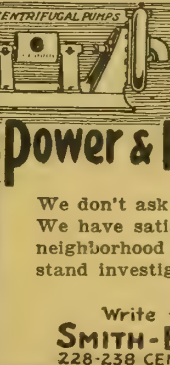


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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, August 4, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
First23

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
California Fresh14
Cheddar20@21
Domestic Swiss20
Eastern Daisy19
Oregon Triplets15½@16
Eastern Twins17½
Longhorn19@19½
Imported Swiss33@35
Tillamook16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts29
Candled31@33
Petaluma—Santa Rosa30
Northern Case Counts25
Northern Fresh Extras21½
Other Outside Stock27½

Prices to producers:
Hens, lb.11@17
Roosters, old9
Broilers, lb.17
Fryers17
Roasters, lb.17
Turkeys14@16
Ducks12
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:
Hogs, 175 to 200 lbs., per cwt.7.75
Prime Steers7¼@7½
Helfers6¼@6½
Calves, lb.3½@9
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head4.75@5.00

POTATOES

Wholesale selling price:
Idaho Russet2.40
Idaho Rurals1.60
Sweets, lb.2@3¼
Northern Burbanks1.20@1.25

ONIONS

Wholesale selling price:
Bermudas, Imperial Val., cr.75
Boiling Onions, crate1.35
Crystal Wax, crate90@95
Local Silverskins, lug.50
White Globe, lug.50
Garlic10@11

VEGETABLES

Wholesale selling price:
Asparagus, green, lb.10
Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax4@4½
Limas3½@4
Green3@4
Cabbage, sack65
Carrots, doz.30
Cauliflower, doz.1.50
Celery, doz.40@75
Chicory40
Chives, doz.1.25
Corn, lug40
Cucumbers, lug30@35
Egg Plant, lb.3@4
Escarole, doz.40
Horseradish, lb.10
Leeks, doz.40
Lettuce, doz.25
Mint, doz.40
Okra, lb.8@9
Onions, Green, bunch.20
Oyster Plant, doz.40
Parsnips, doz.40
Parsley, doz.15
Peas, Telephone4½@5
Peppers—
Chili, Green5@5½
Bells4@6
Radishes, doz.15
Rhubarb—
Crimson Winter, box75
Strawberry90@1.00
Spinach, doz.15
Squash—
Crookneck, box40
Summer, lug30@35
Tomatoes—
Crate15@25
Lug15@25
Turnips30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexander1.40@1.50
Bellflower1.50
White Astrachan, box1.50
Gravensteins1.25@1.75
Crabapples, lug.70@80
Apricots, lug60@60
Avocados, doz.4.50
Bananas, lb.4@4½
Berries—
Strawberries, tray75@1.00
Blackberries, tray75
Raspberries, tray80
Cantaloupes—
Large crates75@1.00
Tip Top45@50
Casabas, half crate1.50

Cherimoyas, lb.20@25
Figs—
Calimyrna, box1.00@1.25
Black, single layer50@60
Grapes, lb.5@6
Malagas, crate1.25
Muscats, crate1.25
Concord, crate1.50@1.75
Thompson Seedless, crate80
Nectarines, lug1.00
Peaches—
Clings, box30@50
Freestones, box30@50
Elbertas, lb.1½
Pears, Bartlett, box1.65
Plums—
Climax, lug90
Damson65@75
Satsuma, lug50@60
Burbank, lug40@50
Wickson75@90
Tragedy1.35@1.40
Pineapples, lb.4½@5½
Sugar Prunes, lug75
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons1.25
Juice Lemons1.25
Grapefruit, Seedless3.00@3.25
Limes, basket75
Valencias2.75
Sunkist3.75

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes, 7½@8½
Apricots8@16
Nectarines12½
Peaches5@7
Pears, lb.11@12½
Prunes8½@10½

NUTS

Prices named by California Walnut Growers' Association are:
No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Peanuts—
California, Raw6
Japan5½
Eastern7½
Rice Corn5.00@5.25

HONEY

Wholesale selling price:
Comb, Fancy, Water White16
White5½@6
Light Amber4@5
Extracted Water White6½@7
White15
Light Amber4
Beeswax25

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Producer's price not far from one dollar under these quotations:
Limas5.00
Bayous6.00@7.00
Lady Washington5.25
Pinks4.35
Black Eyes6.75@7.00
Lentils14.00
Small White5.25
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley, Hay10.00@12.00
Wheat Hay10.00@12.00
Tame Oat10.00@13.00
Alfalfa10.00@11.50
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.15
Corn, White2.25
Wheat2.05@2.10
Oats, White1.90
Oats, Hulled2.25
Egyptian Corn2.20
Barley Seed1.55
Barley, Hulled1.90
Kafir2.05
Milo1.85
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Bran, Heavy1.90
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.2.20
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Bone, Green1.65@1.75
Charcoal1.90@2.00
Oil Cake Meal2.60
Fish Meal3.15@3.25
Rolled Barley1.50
Middlings2.20
Feed Meal2.25
Scratch Feed2.10@2.40
Oyster Shell1.15@1.25

San Francisco Market

SAN FRANCISCO, Aug. 3, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Extras27
Firsts25½

CHEESE

Wholesaler to retailer.
Oregon, Y. Am.14½
Young America11½@12½
California Flats8@13
Cheddar20
Oregon Twins13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Extras30½
Select Pullets24½

Price to producer:
Hens, lb.12½@15
Fryers22@24
Broilers21@23
Roosters—
Young23@24
Old10@12
Squabs2.25@2.75
Ducks12@15
Geese2.50@3.00
Belgian Hares, lb.6@7

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Heifers3@5½
Calves, lb., live weight6@9½
Hogs4½@7½
Wethers6@6½
Ewes5½@6
Milk Lambs, lb.7½@8½
Shorn stock, ¾@1c less

POTATOES

Wholesale selling price:
Idaho1.50@1.75
Idaho Russet1.50@1.75
Burbanks, cwt.1.00@1.25
Oregon2.00@2.25
Delta75@1.00
Sweets, lb.5@7

ONIONS

Wholesale selling price:
Onions, cwt.50@75
Bermudas1.00@1.15
Australian Browns75@1.00
White, crate65@85
Wax, crate1.00@1.10
Oregon, cwt.90@1.00
Garlic, new4½@6

VEGETABLES

Wholesale selling price:
Beans—
String, lb.1@2
Limas, lb.2½@3
Wax, lb.1@2
Corn, sack75@1.25
Cucumbers30@50
Eggplant, lug40@50
Lettuce, crate50@1.00
Okra, lug75@1.00
Peas, sack1.25@2.00

WEATHER CONDITIONS

For Week Ending July 31, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Stations	Rainfall Data		Temperature Data	
	Past Week	Seasonal to Date	Normal to Date	Maxi- mum— —Past Week— Mini- mum
Eureka	.00	.20	.11	64 52
Red Bluff	.00	.00	.00	104 64
Sacramento	.00	.00	.00	90 56
San Francisco	.00	.01	.01	70 52
San Jose	.00	.00	.00	84 50
Fresno	.00	.00	.00	108 58
Independence	.00	.00	.00	96
San Luis Obispo	.00	.01	.01	76 48
Los Angeles	.00	.00	.00	78 60
San Diego	.00	.00	.00	74 62

Peppers—
Bell, box30@40
Chili, Mexican, lug30@40
Rhubarb75@1.00
Squash—
Summer, lug35@65
Cream55@75
Tomatoes—
Delta, lug25@35

FRESH FRUIT

Wholesale selling price:
Apples—
Alexander50@1.00
Red Astrachan90@1.25
White Astrachan1.00@1.25
Gravenstein70@1.10
Apricots, lug1.00@1.25
Canner's price, ton20.00@25.00
Bananas, Hawaiian, bunch1.25@2.00
Blackberries, chest1.00@2.00
Cantaloupes—
Turlock Ponies25@50
Southern, crate75@1.00
Turlock Standard50@1.00
Delta, lug40@60
Casabas, lb.1½@2
Figs, box, single layer, black75@85
Black, double layer1.25@1.50
Grapes—
Fontainebleau, crate30@50
Thompson Seedless, crate75@85
Malagas, crate75@1.00
Huckleberries, lb.12½
Loganberries—
Red, chest5.00@7.00
Black, chest1.00@1.50
Peaches—
Yellow, basket25@35
White, basket25@35
Large, lug65@75
Pears, Bartlett, box1.00@1.25
Other Varieties75@1.25
Canner's ton17.50@25.00
Pineapples, doz.1.00@1.75
Plums, crate40@75
Raspberries, chest5.00@10.00
Strawberries, chest2.00@4.00
Watermelons, doz.1.50@3.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50@3.50
Lemons1.50@3.50
Lemonettes1.25@1.75
Limes, Mexican, case4.00@5.00
Tangerines, halves75@1.75
Valencias2.75@3.50

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼c. All outside sections ¼c lower.
Other Fruits, Stand—
50-lb. boxes—ard. Choice Fancy
Apricots5½c 6½c 7¼c 7½c
Peaches3¼c 3¾c 4 c 4½c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7c; 12-oz., 6c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:
Nonpareil16½
I. X. L.14
Ne Plus13
Drakes11½
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6
Italian Chestnuts6½@7

BEANS

Wholesale selling price:
Limas4.50@4.55
Pink3.40@3.60
Black Eyes5.00@5.25
Cranberry4.00@4.25
Small White4.30@4.40
Garbanzos6.50@6.75
Large White4.40@4.55
Bayou4.25@4.50
Manchurian Speckled Bayous3.50@3.75
Manchurian Butters4.50@4.75
Red Mexican5.40@5.50
Red Kidney5.90@6.00
Horse Beans2.75@3.00

HONEY

Wholesale selling price:
Comb, Water White14@16
Light Amber11@12
Amber10
Extracted White6½@7½
Light Amber3½@4½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley8@10
Sonoma-Mendocino11½@13
Oregon Clusters11½@13

HAY

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt. bales)	13.50@14.50
No. 1 Wheat or Wheat and Oat	11.50@12.50
No. 2 Wheat or Wheat and Oat	8.50@10.00
Choice Tame Oat	11.00@11.50
Other Tame Oat	8.00@10.00
Barley	8.00@10.00
Wild Oat	6.00@8.00
Alfalfa	7.00@10.00
Stock Hay	5.00@5.50
Straw	40@45

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.75@1.80
Barley Feed	1.20@1.22 1/2
Barley, Old Crop Feed	1.02 1/2@1.05
Corn, Eastern Yellow	1.80@1.82
Corn, Egyptian White	1.85@1.90
Oats, Red, Feed	1.25@1.32 1/2
Oats, White, Feed	1.47 1/2@1.50
Millet	2 1/2@3 1/2
Flaxseed	5@5 1/2
Rye	2.00@2.25
Sunflower	5@5 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	15.00@16.00
Bran, ton	27.50@29.00
Feed Cornmeal	41.00@42.00
Cracked Corn	41.00@42.00
Rolls Barley, ton	25.00@26.00
Rolls Oats, ton	37.00@37.50
Middlings	32.00@34.00
Shorts	28.50@29.50
Oilcake-Meal	36.00@37.50
Cocanut Oilcake Meal	22.00@23.00

Citrus Fruit Market

Los Angeles, August 4, 1915.

Shipments of oranges from Southern California to date since November 1, 1914, 30,358, lemons 5504, total 35,862; last season, same date, oranges 33,949, lemons 2468, total 36,417. From Tulare County, oranges 5648, lemons 202, total 5850; last season, same date, oranges 3875. From northern counties this season, oranges 630, lemons 2, total 632; last season, same date, oranges 404, lemons 5, total 409.

NEW YORK, Aug. 2.—Thirteen cars sold. Market is steady. VALENCIAS—

Old Mission, xf, Chapman	Avge. \$4.75
Old Mission, xf, Chapman	4.75
Golden Eagle, S. D., Chapman	4.00
Aurora American, F. Dist.	4.45
Ruby	3.55
Anaheim Supreme, S. T. Ex.	5.00
Charter Oak, S. D. Ex.	4.70
Charter Oak, Blue, S. D. Ex.	4.35
Old Mill, A. C. G. Ex.	3.30
Red C, Covina Ex.	4.15

CINCINNATI, Aug. 2.—Four cars sold. Market steady. VALENCIAS—

Don Quixote, S. T. Ex.	Avge. \$3.80
LEMONS—	
Mt. Wilson, A. C. G. Ex.	\$2.55
Mt. Lowe	2.10
Greyhound	1.95

CLEVELAND, Aug. 2.—Three cars sold. Market is strong on both lemons and Valencia. VALENCIAS—

Martha Washington, O. R. Ex.	Avge. \$4.60
PHILADELPHIA, Aug. 2.—Two cars sold. Market strong on Valencia, weak on lemons. VALENCIAS—	

Gold Medal, G. O. Groves	Avge. \$4.80
Medal, G. O. Groves	3.75
Searchlight, O. R. Ex.	4.40

PITTSBURGH, Aug. 2.—Six cars sold. Market easier on Valencia, steady on lemons. VALENCIAS—

A. No. 1, American F. Dist.	Avge. \$4.05
Majesty, O. K. Ex.	3.85
Red Shield, A. C. G. Ex.	3.95

LEMONS—

California, Q. C. Ex.	\$1.55
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ST. LOUIS, Aug. 2.—Five cars sold. Market is unchanged. VALENCIAS—

Gabriella	Avge. \$3.80
Searchlight, O. R. Ex.	3.90
S. S. Brand, O. R. Ex.	3.75

BOSTON, Aug. 2.—Eight cars sold. Market strong on Valencia, unchanged on lemons.

FUTURE OF THE ALMOND

(Continued from Page 127)

duced this differential to a duty of four cents per pound on the shelled and three cents per pound on the unshelled almonds. The wisdom of this change is yet to be demonstrated. We know, however, that we on the Pacific Coast are pulling against the tide, while the European grower is simply drifting. We know that to insure profitable sale for a greatly enlarged output we must extend the markets and induce more general consumption of almonds. The call is out for every grower to help. The task before us is a stupendous one. A successful continuation of almond growing here demands organized, aggressive cooperative work. The duty of the grower is not ended when he sacks his crop. Foreigners are appropriating our markets and anticipating the needs of our people. We must popularize our products, advertise their desirability and cheapen their production. Many of the vexatious problems pertaining to location of orchard, varieties

to grow, pruning, spraying, cultivation, etc., have been fairly well worked out. Growers know about what it costs to produce almonds. Those who have tried it, know of the difficulties of selling in the open market. The more thoughtful growers realize that the greatest problem confronting the almond industry of California today is that of marketing the product.

About 1898 local associations of growers began to be formed. These were a benefit from an educational standpoint at least, for they taught the benefits of cooperation. They generally combined for selling purposes the greater part of the almonds produced in the immediate vicinity of the location of the association. Their sphere was limited. They had no selling agencies, depending on what seemed to be competition among the commission houses and speculators. They were not in a position to even obtain data on which to place a fair valuation of their crops. They were surely and safely in the hands of the enemy.

Previous to 1910 little had been done by California growers either to develop or protect the market for almonds. Each individual, isolated grower was a complete selling agency within himself. He was supposed to be a walking encyclopedia of almond lore. He was eagerly sought for by the agents of the commission houses and was legitimate game for the speculator. Under these conditions ridiculously low prices ruled for the grower while the consumer was taxed to the limit. Actual entries in the books of growers of this time show that Nonpareil almonds were sold at prices ranging from seven to ten cents per pound. The buyer, interested only in the goods he had acquired at a low figure, had no thought for the future of the industry. He took all the profit the traffic would bear. The markets were demoralized. The demand for almonds was confined to the few. The speculator usually bought early and on a safe margin. He imposed upon both producer and consumer and made of the almond an article de luxe.

Only during the last five years has the California almond situation been studied from a commercial standpoint in the interests of the growers. Beginning in 1910 with six local associations and 230 members, a start was made by "The California Almond Growers' Exchange." It was purely a pioneer effort based on a determination to secure to the growers the profits of the business. Those who had reaped rich harvests at the expense of the growers saw in this movement the killing of the goose that was laying the golden egg.

Organization has progressed until today there are 18 associations and nearly 900 members. These are located in the almond growing sections from Tehama on the north to San Bernardino on the south. The Corning association, representing about 50 tons, has recently been organized and is affiliating with the exchange. The Guinda Association, in Yolo County, with 120 tons, a fire-proof warehouse and complete equipment, has for years been an independent association. A long and careful investigation convinced the Guinda people that they were on the wrong track; that if they were to accomplish anything in building up the almond industry, they must train with those who are doing that line of work. Tired of competition they turned to cooperation and joined the exchange.

During the month of June of the present year 300 tons of almonds were added to the output of the exchange for the season of 1915. The exchange has never lost an association. The associations have lost but few members. About 80 per cent of the California crop is now handled by the exchange. The remaining 20 per cent is sold independently and generally for less money than is realized by exchange members for the same class of almonds. These sales furnish ammunition for the brokers who are doing their utmost to discredit and discourage cooperation among growers. The independent seller unwittingly pays a commission for his own undoing. That the speculator makes a profit goes without saying. That profit belonged to the grower and had he been a member of the exchange he would have gotten it. Were it not for the almonds sold by non-members of the exchange the speculators and demoralizers of

the markets would have nothing on which to operate and would be forced out of the business. It is no less to the interest of the consumer than it is to the producer to eliminate the speculator.

The Almond Growers' Exchange has had a healthy growth from its inception. It is placing the almond business on a firm foundation. It has done much to eliminate speculation and to steady prices. It markets the almonds of its members at cost. Its equipment for handling the business, while efficient, is neither elaborate nor expensive. The aim in view at all times is to return to the grower every dollar possible from every sale made. It names and maintains a price based on crop conditions. It adopted and maintains a high business standard. Starting without capital and without credit, it has advanced financially, until it is now in a position to handle the output of the state with ease. It has already begun that development which will ultimately enable the California grower to make a strong fight for the almond trade of America. It is but an infant now; when it reaches maturity it will be a giant capable of commanding attention. It should have the hearty support of every grower. Already it has developed a satisfactory selling scheme. It has reliable agents in all the large Eastern markets. It has gone into territory and developed trade in sections hitherto neglected. It has taken care of all the old markets and has developed many new ones. By its methods of distribution it encourages increased consumption. In the aggregate this work has made a respectable showing. It has studied the needs of various sections and has learned how best to place the several varieties. What has the outside seller contributed to this work?

The exchange has studied foreign methods and has mapped a campaign in the contest for what we believe to be our share of the business. Noting that 80 per cent of the imported almonds are shelled, while but five per cent of the California product is shelled; that there is a better market for the shelled goods, the exchange determined to make that market available to the California grower. It took up the work a year ago and now has at 19th and C Streets in Sacramento, a large fire-proof building devoted exclusively to almond shelling. It is equipped with modern machinery and labor saving devices. This year extensive improvements are being made and the plant enlarged. The capacity of the plant is now supposed to be one carload of meats per day. This will enable the exchange to compete on a commercial scale with the imported product and will also relieve at times

congestion in certain varieties. The cost of the shelling plant was about \$14,000, and best of all it is paid for.

This plant is the property of the loyal members of the several associations. It is one of their investments made to insure the permanency of the business. It represents money saved through cooperation. It equips to make and save more money. It was built out of the surplus from several funds, remaining after the growers had been returned annually the highest market price for their almonds. No special assessment was ever levied for the building fund. No grower was ever approached for a subscription. It was done so quietly and so easily that but few of the contributors knew that cooperative methods were building a lasting monument to their loyalty and business forethought.

Not one of the non-members or the independent associations contributed a dollar to this great achievement. On the contrary their influence had to be overcome, costing both time and money. When the associated almond industry of California shall have won its victories and occupies the position to which it is entitled, it will be a source of pardonable pride for any participating association to claim a share in these pioneer efforts. To what does the independent seller point as his contribution to the good of the calling?

The future of the almond in California depends upon the degree of cooperation practiced among the growers. Cooperation in selling is a modern idea, and in this line the grower needs education. The situation is full of hope. That 80 per cent of the growers of the state should have cooperated and built up a successful selling agency within and during the first five years of the experiment is cause for gratification. The remaining 20 per cent of the growers have been benefited annually through the existence and influence of the exchange, from \$50 to \$100 per ton on their output. This is their dividend on the business ability of their fellow growers.

The outside tonnage is needed in the exchange. An increased volume of business means a decreased cost in handling the product. If we are to succeed in the contest against the imported almond we must concentrate our efforts. The greater the volume of our business, the better our standing in the business world, the easier to obtain rates, gather data and secure recognition in the markets. California alone can supply our nation's demand for almonds. Whether or not she ever becomes a dominating factor in that supply depends largely upon the support her growers give to cooperative marketing.

—two more

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LOS ANGELES

August 12, 1915

SAN FRANCISCO

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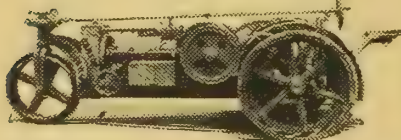
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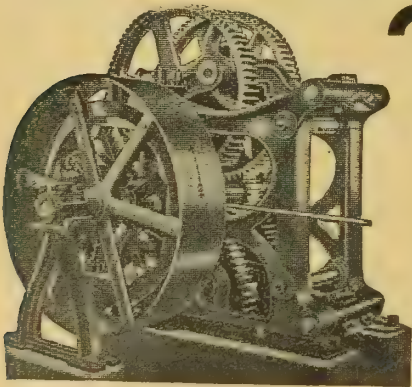
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Vol. XLV No. 7

LOS ANGELES: THURSDAY, AUGUST 12, 1915

One Dollar Yearly

The Apricot in the Santa Clara Valley

Leonard Coates Writes for Cultivator Readers of the Culture of the Apricot,
Giving Particular Attention to Pruning



THE apricot is a crop of very great importance in the Santa Clara Valley, which section may easily be made to continue headquarters for this luscious and popular fruit. Not only is the profitable culture of the apricot on a commercial scale in these parts a very great success, but it has been so for half a century. This does not mean that the development of apricot land has reached its limit by any means, as there are thousands of acres of land admirably adapted to the production of this fruit throughout the valley, on both sides, especially on the east and south to below Gilroy.

Statistics show that the yield, as with other crops, fluctuates very considerably, as may be seen from one example, viz. that in 1908 the total output of apricots from the state was 19,000 tons, and in 1913 something over 9,000 tons. Only once has this larger figure been exceeded. So it does not look as if the apricot was in danger of being "overdone."

At this time—midsummer—when the apricot harvest is over, growers are particularly interested in the care of their trees and the best methods to employ in order to keep them in the best bearing condition.

Pruning

Pruning the apricot should then receive first attention, although such work is usually supposed to be performed while the tree is in its most dormant state. There is a reason for all of these things, and to be cognizant thereof it is necessary to know something of the habit of the tree. The apricot before its bearing period is a most rampant grower, throwing out side branches, or laterals, from its very start in the nursery. It used to be the practice to cut off all of these laterals and head the tree at planting time to 16 or 18 inches from the ground. As a digression, I would remark that "from the ground" is an expression somewhat ambiguous in its acceptance. In loose, sandy soils trees are often planted, four to six inches, or even more, below the bud. If done in heavy soils, it would be injurious, and would often cause the death of the tree. On the whole it is better always to set a fruit tree relatively as it has already grown and as nature intended it should grow, which is that the "collar" or point between root and stem, should be at or just below the surface of the ground. Never mind about the roots, they will take care of themselves provided the soil is kept in proper condition and sufficient moisture is available.

It is better to let the trees when planted be from 20 to 24 inches from the ground in height, and also better to leave several of the laterals cut back to three or four buds. The buds

on these laterals are the first to start, the leaves on them to open, and normal growth to commence. If they have all been removed the buds on the main stem, having lost their protection, are more apt to be injured or they have been injured in too close pruning of the laterals. In this case—and it very often happens so—the clipped tree becomes so gorged with sap that a condition known as "sour-sap" is liable to occur, or the tree will get sunburned and begin to "gum" even the same season it is planted.

As remarked before, the apricot is a very rampant grower while young, the roots pumping up sap with great vigor as soon as the first warm weather is felt; this is usually early in March. This sap must be assimilated, and for that reason it is necessary that plenty of buds be left on the tree which are uninjured and therefore ready to start into growth as soon as the first flow of sap reaches them. No pruning is required the first summer unless possibly to balance the tree by shortening some shoot which is having too much its own way.

The following spring, or about one year from the time the tree is planted, it must be carefully pruned, which, however, requires more common sense than skill. The operation consists in cutting almost everything away except three branches, and these should be cut back to six or eight inches; it is better to leave some small laterals, or future fruit spurs. These branches should be selected so that they are several inches apart where they start from the main stem. This is to prevent, as far as possible, the branches from starting all at one point in a whorl.

The Second Summer

During the second summer and beginning quite early shoots starting on the underside should be at once removed, as well as those that have a tendency to grow towards the south. The reason for this is that as the prevailing summer winds are from the northwest in the Santa Clara Valley, it is important that growth to windward be encouraged, and the reverse to leeward. The object the second summer is to start four or five strong shoots on the upper side of those cut back the preceding spring, so that they grow in an upright direction. A moment's reflection will convey the idea that, so started, a strong foundation is already laid. The reason, by the way, for deferring the pruning alluded to, and cutting back the young trees in the spring instead of in midwinter, is that it thereby tends to lessen the danger from sour sap.

The small laterals and fruit spurs should be shortened in to three or four inches, and much of the strong wood growth, or suckers, removed at an early stage to give these spurs a

chance to live. These spurs should be most carefully preserved in this manner, as they will bear the future crops but cannot exist if crowded out and smothered by a coarse wood growth. An apricot orchard should begin to bear the third year and yield a fair crop the fourth, but this depends mainly upon the preservation of those spurs which will produce fruit close to the main limbs and near to the ground. If the main upright growing branches grow very vigorously, which they will very probably do, it may be advisable to shorten them early in the summer.

It should be remembered, however, that all of this early summer pruning is but auxiliary and is rendered necessary by reason of the usually rampant growth.

This pruning is supplemented by a later pruning as soon as all growth is stopped, which will be in August or September, depending largely upon the moisture in the soil. It should not be done too early, as this would cause the summer buds to start growth instead of remaining dormant until the spring.

At this time the main branches, four or five in number, should be cut back to about 16 or 18 inches from the previous season's growth. All spurs which have not already been shortened in, should be attended to at once.

The Third Summer

The third summer these various operations are all repeated, the amount of wood to be cut out being more than doubled however. Shorten spurs as usual, of last year's growth as well as of the current season's and keep the center of the tree well opened.

There are two extremes of pruning the apricot in California; both should be avoided. One method often practiced farther south and near the coast is to retain one main central branch or "leader," making a taller tree; the other, a plan much followed in Solano County, is to grow the trees very low and spreading, in shape like an inverted umbrella frame, or even more open. This is done to encourage very early ripening of the fruit, but at the expense of the tree. There is no more beautiful sight than the apricot tree trained in a modified vase or goblet form and with the fruit spurs jealously cared for so that the rich golden fruit literally clothes the main branches from within two feet or less of the ground.

Summer pruning of the apricot is strictly in line with that axiom in horticulture, "prune heavily, and when dormant, for wood; prune more lightly, and in summer, for fruit."

The Fourth Summer

The fourth summer the trees will

bear a little fruit, perhaps it may be a crop. When this is gathered the trees may be pruned, unless still growing, in which case it is better to wait a few weeks. The principles, as here laid down, are ever the same. Continue the same operations, always remembering to take care of the fruit spurs. If the spurs are not annually shortened; if the wood growth that robs them is not removed; if the main branches are not sufficiently shortened, the apricot tree will be proportionately less profitable.

There are many other points to consider in regard to growing and maintaining a profitable apricot orchard, some of which may be briefly enumerated: Location, if level, to be sufficiently high to prevent liability of injury from spring frosts, if near the coast this need not apply; or a gently sloping, or even a steep hillside, where air drainage as well as water drainage is perfect. This is nearly ideal. The soil for the apricot root must be very deep, and well drained. For the apricot on peach root a free, warm soil but with more surface moisture; and in heavy soil, or where there is spring seepage, nothing but the plum root should be used. The Myroblan is most popular, because best known, but there are other plum stocks which are preferable.

Culture

The apricot, being naturally a very vigorous grower and maturing its fruit early, rarely requires summer irrigation.

If the average rainfall is less than 12 inches the land should be winter irrigated, and if there is a doubt of sufficient moisture it is better to soak the land in the winter in any event.

Thinning the apricot should be considered as essential an operation as pruning, provided of course the fruit has set well. It does not pay to cut and seed small, undersized apricots, and the canners won't take them at any price. Thin the crop and thin well; by doing so you will make money on your apricot crop, while small fruit will hardly pay expenses.

It should not be necessary to allude to the handling of the soil. It goes without saying that this must be well done, or all other work and care is wasted. Of late years we have become lazy in the matter of cultivating the land, which is even more necessary after irrigating than if there were no irrigation.

Irrigation, if applied during the summer, should always be in deep furrows in which a sub-soiler has followed the plow. This gets the water to where it is needed and leaves little or no baked surface.

Diseases of the apricot are few. A good winter lime sulphur spray will generally help sufficiently to keep the trees healthy.



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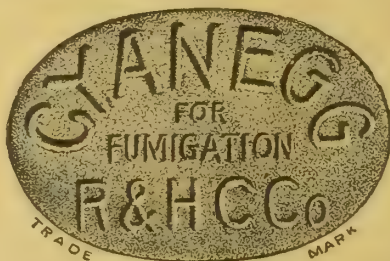
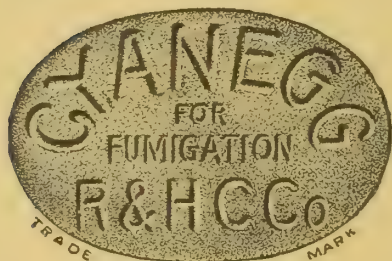
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PRACTICAL FUMIGATION

Written for California Cultivator

By G. W. Waterbury



THE commercially profitable citrus tree of today is like a sensitive animal; it responds well to good care and attention and quickly represents improper treatment. Take a lemon tree for instance; a scratch across the trunk at certain times of the year may cause its death; too little or too much water breeds disease where fungus attacks destroy vitality; improper pruning causes a severe falling off of fruit, and scale always prevents a satisfactory set of fruit on any tree whose object is to produce fruit.

In Southern California citrus growers have been over 20 years fighting the different species of "armored" scale; the species familiarly known as the "black," "red," "yellow," "purple" scales. The cottony cushiony, the mealy bug and the red spider have also caused trouble from time to time in certain sections of the citrus belt.

In the central portion of the state, in the Porterville-Lindsay section, there was until recently an almost complete absence of insects injurious to citrus trees, and the only one worth mentioning was the thrips, which did some damage to the oranges through scarring. Then came the new addition to the color scheme of the scale family, coccus citricola, familiarly known as the "gray" scale. When the gray scale arrived the Sierra foothills knew that eradication was henceforth to be an annual affair over 45,000 acres of citrus lands.

There are certain facts that are now well established in regard to plant life in every section of the world, and the principal one is that wherever large plantings are made some species of injurious insects will eventually appear to subsist on either fruit or foliage, and a fact equally important to the grower is that whenever certain insects become well established they can never be wholly eradicated. By a certain expenditure of time, trouble and money, however, almost all of the predacious insects can be so restricted in numbers that their commercial damage is very slight. That is, the grower, whether he have apple, peach, prune, apricot, pear or citrus trees, can by expending so much money annually or biannually keep trees and fruit in a condition practically free from scale, even though complete eradication is not possible.

In all eradication work it is the proportion, the percentage of kill, that counts, and a variation of ten per cent, while a comparatively small proportion of the whole, means a great deal to the grower. This is due to the immense productivity of the scale family whose two missions in life consist in eating and breeding. The progeny of one female is sometimes immense, Prof. Quayle stating that one citrocicola can produce as many as 2000 young. It is numbers that do the damage and 100 on an orange tree would be little damage, while 30,000 would devitalize the tree and the 100 grow to 30,000 in a season or so if left to themselves.

In all deciduous trees spraying is the acceptable manner of control, and it is then a matter of sprays for effectual eradication. In citrus trees spraying is not the way to kill scale and never will be; it is not a question of what kind of sprays to use; it is a matter of physical impossibility. The deciduous trees are defoliated when spraying is done; the citrus trees are never defoliated and seldom properly pruned.

It is the physical character of the fruit trees where scale is to be killed that determines the mode of procedure, and it was the impossibility of properly penetrating a dense amount of foliage that first led to the use of hydrocyanic acid gas and fumigating tents. The gas penetrates everywhere about trunk, branches and leaves; the spray material does not in citrus trees.

In the southern citrus belt the principles of fumigation are now universally recognized, but in the Porterville district, where the scale is a new excitement, there is a tendency to start the scale killing processes all over again, even though experimentation is always costly work.

Up to the present time cyanogen gas is the only gas found effective for fumigating work. Mr. F. W. Braun told me he had tried many forms of gas, all more or less of a deadly poisonous nature, but always met with failure in killing scale. Owing to the nature of manufacturing cyanogen gas (it is a synthetic process), the cost per pound will always be high, although the fruit men can perhaps derive some satisfaction from the fact that the mining men pay from \$60.00 to \$100.00 a ton more than do the citrus growers.

Good fumigation, where the scale have not previously become too numerous, will last two years on oranges and from 12 to 18 months on lemon trees. The great bulk of the trees in the citrus belt are oranges, and the average cost of fumigating every other year is about 33 cents, or 16½ cents each year. The apple men spray at least an average of three times each year and at a cost of about six cents for each spraying, or 18 cents per year and 36 cents for every two years, against 33 cents for the citrus grower. It is principally because the amount is rendered every other year that the cost looms high.

If I had my choice between fertilizing and fumigating I would drop the fertilizing first if the money could not be had for both, and yet we know that both are important. An unfertilized tree will always dig up a certain amount of fertility from the soil, but a scaly tree will never set fruit in paying quantities. When the grove is badly infested there will be absolutely no fruit on the trees, and in the case of the red and purple scales the infested trees will be killed in time.

Fruit once covered with scale, or with the fungus resulting from the scale, can never be made attractive. If severe washing is given the fruit will not ship without heavy decay and if too badly injured is fit only for the lower grades or the cull box. Such losses soon run up into the hundreds of dollars.

The practical fumigator, the acid and cyanide people, are not so much interested in when the work is done as is the grower. They know the work must be done some time, and if they are in business to stay it matters little whether the work is done this year or next or if the grower lets his grove go a year too long and spreads the infestation more generally about the community. A very dirty grove is likely to call for successive fumigations while if the work is done regularly every other year the tree remains practically clean and the fumigation work lasts longer. Having an infested grove is against the law of California and the county horticultural commissioner should see that the law is enforced; he is allowed no discretion in the matter when complaint is made.

Government men, practical fumigators and Mr. Braun's house are working to improve the art, to lessen the liability to injury while yet keeping the dosage up to a full state of efficiency. The careful grower wants all the scale killed but no damage done to his leaves or fruit. Woglum gave us the marked tents, thus somewhat eliminating dosage chance. He did not give us, however, a sure and stable climate, where temperature, humidity, electrical influences, etc., all those intangible influences which resist accurate determination, can be carefully determined.

The fumigator of today, if he seeks to improve his profession, carries dosage charts, reliable thermometers and a psychrometer. Besides all these the foreman should be a man of experience and capable of judging carefully in regard to all matters under his control.

The fumigating machine marks another step forward in the art of fumigation, and if these machines will do the work there is no question but that the cyanide and sulphuric acid mixed in exact proportions for each tree in a machine where high temperatures are always present and where the gas goes out immediately at a maximum strength, will help secure more uniform results.

Prof. Quayle of the Riverside experiment station, assisted by Mr. de Ong, are now working on new dosage charts, and some early experimental work in collaboration with Mr. F. W. Custer of Corona are likely to be of both benefit and profit to the citrus grower when definite results are made known.

DATE CULTURE IN SOUTHERN ARIZONA

Answering an inquiry regarding date culture, Prof. R. H. Forbes, dean of the University of Arizona college of agriculture, replies:

"Date palms will endure any degree of cold experienced along the Colorado River. At the Tempe date orchard we have passed through a temperature of 14 degrees Fahrenheit, with a resulting loss of the green leaves of the palms, but without killing them. It is only fair to say, however, that while the new tops came out promptly, the trees were quite severely set back as a result of the loss of reserve materials needed for the restoration of the palms. At Yuma three years ago, at the time of the severe cold weather, the date palms were very little damaged.

"Date palms require comparatively little irrigating water but must never be allowed to dry out. With water at ten to 12 feet below the surface, the roots of the date palm will very quickly reach moist soil so that they

will be in little danger of suffering from want of water supply. Nevertheless, even if palms are in moist soil an occasional irrigation is advisable.

"We believe that certain desirable varieties of dates will prove of commercial profit when they can be brought to this country in sufficient number. At Tempe, for instance, the following varieties have been tested and found satisfactory for southern Arizona conditions: Birket el Haggi, now known as Hayani, Tadala, Tennessee, Khadvawi, Maktum, Kustawi, Behri, Nesheem, and Nazl el Bacca. According to conservative calculations a ten-acre orchard of Hayani palms containing 400 trees and yielding according to the average shown at the Tempe orchard should give a net profit of \$2000 a year with minimum of labor during the hot months of May, June, July and August.

"Date palms begin to produce suckers at about six years of age and keep on producing them until about

20 years of age. Different varieties vary in the number of suckers produced, but taking all varieties together an average of about 15 suckers to the palm is a fair estimate. At the prices paid for imported date suckers the offshoots produced in a growing orchard ought to be a very material source of profit, inasmuch as these suckers ordinarily cost, laid down in this country, not less than \$3.50 apiece, and with the importer's profits added, usually more than that.

"I have no doubt of the suitability of the Cibola Valley conditions for date culture inasmuch as we regard the Colorado Valley below Yuma the best place for experimental date culture we have thus far worked with. Climatic conditions also are favorable."

SURE CURE

Mike—What's th' best thing to drown one's sorrows in, Pat?

Pat—Perspiration! Hard work will kill them.

RELATION OF WASHING TO DECAY IN WASHINGTON NAVEL ORANGES

By C. W. Mann, Pomologist of the United States Department of Agriculture

During the past two or three years there has been a great increase in the washing of oranges in the packing houses of Southern California, and the indications are that a much larger proportion of the fruit will be subjected to this treatment in the future unless effective measures can be used for the control of scale and sooty mold in the orchards.

The results of the investigations of the bureau of plant industry have shown that washing, even under the most favorable conditions, is followed by an increase in the decay in the packed fruit. The process offers ideal conditions for the infection of injured fruits with blue mold, and where washing is employed a higher standard of care in the field and

(Continued on Page 155)



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Goodyear Extras

Goodyear Fortified Tires have five costly features found in no other tire. They combat your five major troubles in better ways than anyone else attempts.

These tires, in addition, have other features not commonly employed.

If we omitted those extras, this year's probable output would cost us \$1,635,000 less. That is, we could add to our profits about \$5450 per day.

Most of these extras are hidden. Tires that lack them look as strong

as Goodyears. And you would never know it, save by months of use, if we left them out.

\$500,000 Added

This year's improvements—just our latest additions—cost us \$500,000 yearly. Most of it goes into extra rubber—all into extra wear.

And this much is added—this half million dollars—at a time when we save users five million dollars in price. At a time when some makers are skimping to meet competition.

Then our Research Department—to find more betterments still—will cost us \$100,000.

Yours for the Asking

These extras are yours for the asking. Tires without them will be offered so long as you will buy them. But any dealer, if you ask him, will supply you Goodyear tires.

Goodyear has for years outsold any other tire. It is gaining new users faster than we can supply them. And those extras did it. (2418)



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STANDARDIZATION OF PACK



FROM the constitution and by-laws of the Watsonville Apple Distributors we give in full Article IV, Standardization of Pack.

The first or highest grade of apples to be packed by members of said Watsonville Apple Distributors, shall be known as "Standard," and all first or highest grade apples packed by or for any member of the said organization shall be put up according to the standard prescribed by the terms as what is known as the "Standard Apple Act of 1915," approved by the governor of the state of California on the eleventh day of June, 1915, and shall be stamped and graded as by the terms of said act provided. All other grades of apples packed by members of said organization shall be packed and

branded in accordance with the standards therefor that may be adopted by this board.

All of the apples packed by members of said organization shall be subject to inspection, both before and after packing, by inspectors appointed under the terms of said act, and by inspectors acting under authority of this board.

For the purpose of making such inspection, all inspectors so appointed or acting shall have the right at any time to enter into any place where apples are being kept, stored or transported by any member of said organization, and whenever it is deemed necessary by such inspectors packed boxes may be opened for the purpose of inspection.

When any apples belonging to any member of said organization shall be stored or held in the warehouse or in the possession of any other person, firm or corporation, the membership card in said organization signed by the owner of said apples, shall serve as a written order upon the party with whom such apples are stored or in whose possession they may be, to permit such inspectors to inspect the same as herein provided.

No apples shall be shipped or delivered for shipment or delivered to a purchaser thereof in packed boxes until the same shall have been inspected as herein required and found to be packed and branded in conformity with the standards herein referred to.

For the purpose of inspection and for the purpose of causing apples which have been inspected and have been found to be packed or branded in violation of any of the requirements hereunder, to be repacked or rebranded, the members of the board of control appointed by this board, or any one of them, shall at all times be entitled to the possession of all the apples packed or being packed by any member of this organization, upon demand.

At a recent meeting of the executive board of the Watsonville Apple Distributors three grades for apples packed by members of the organization were established, to be known and designated as "Standard," "Fancy" and "B" grade.

The "Standard" grade is to come under "The Standard Apple Act of 1915," and the apples packed in this grade can vary in size in any box not to exceed one-quarter of an inch. Apples packed in this grade must have the inspection of the state inspectors, and the packed box must have the stamp of the state of California thereon.

The "Fancy" grade is to be of the same quality of apples as the "Standard" grade in every respect except variation in size, which shall be as follows:

Four and one-half tier apples to vary in size from two and one-fourth to two and five-eighths inches.

Four tier apples to vary in size from two and five-eighths to three inches.

Three and one-half tier apples to include any apples more than three inches.

Apples packed in this grade must be inspected by the inspectors of the

Watsonville Apple Distributors, and the packed box must have the stamp of the association thereon.

The "B" grade will allow in the pack, caterpillar bitten apples, slightly misshapen apples, bruised apples where skin is not broken, and stemless apples. Wormy apples or apples infected with infectious diseases will not be permitted in this pack. A variation of not over three per cent of any one defect or a total of 12 per cent will be permitted. Apples packed in this grade must also be inspected by the inspectors of the Watsonville Apple Distributors and the packed box must have the stamp of the association thereon and marked "B" grade.

The three grades established may be packed in the so-called Northwestern or Standard box, or in the California box.

GRAVENSTEIN SHOW

The Sebastopol Apple Show is already far enough advanced in its arrangements to prove that a wonderful exhibit is to be made this year by King Gravenstein. The permanent apple show building has not yet been built but as heretofore a temporary pavilion will house the exhibits. Secretary Kelly writes that thousands of incandescent lights have already been arranged for illumination of the mammoth tent, and that in addition to the exhibit of Gravensteins there will be many other varieties of apples on the tables and as the show is at the home of the Luther Burbank experiment grounds there will be an extended exhibit of greatest interest.

On Gravenstein Day there will be distributed free to all 10,000 of the finest Gravensteins.

Of course there will be a great number of special features such as the Liberty Bell, living tower, fountains, merry-go-rounds, and others similar and yet different from those seen in former shows.

The following are the rules for judging:

One thousand points, made up of 600 points for perfect fruit, 100 for uniform size, 100 for color and 200 for perfect pack, will constitute a per-

WELL CASING

of superior merit—single and double—hard red steel, or galvanized—in all sizes. Ask for Catalogue 17.

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(4)

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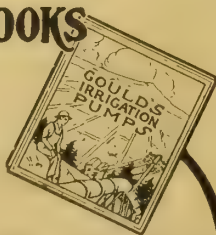
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"The Farmers Friend"



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fect score. In judging the pack, 40 points will be allowed for bulge, 40 for alignment, 40 for height at ends, 40 for compactness and 40 for attractiveness and style.

For each wormy apple, 40 points will be deducted; for other imperfections for scab or scale, 8 points each. Deductions on pack, uniformity and color will be made in the discretion of the judges.

In judging boxed apples, owing to the unusual amount of scab, the judges will be guided by the same rules governing commercial packing houses, and making allowance for the scab. For lack of stems, no deduction will be made, except where skin of apple is broken.

No distinction will be made between three, three and one-half; four and four and one-half tier pack; but any entry will be scored against for want of uniformity, unless all of one pack, either three, three and one-half, four or four and one-half tier.

In the competition for sweepstakes prizes, no variety will be given any preference.

In judging 200 box lots, four boxes from each entry will be examined, of the 63 box lot three, of the 42 box lot two, and of the 14 and 7 box lots one each. In case of a tie in the score between two or more entries, additional boxes of each entry tied will be examined until the tie is broken. Should it be impossible to break the tie, the cash prize shall be divided among those tied and other prizes will be awarded by lot.

No score in any class will be announced until the judging of that class is completed.

In the judging of the dried fruit, by-products and features, 1000 will constitute a perfect score, and the board of judges will be guided by their own discretion in rating the several entries.

BIG CROP OF WALNUTS

The blight has done serious damage to the walnut crop and the big promise has been somewhat reduced, but in spite of that the coming crop will be large. Some weeks ago we quoted from letters of subscribers telling of immense clusters of nuts on the trees this year. That brought out reports from other orchardists who write of even larger clusters.

County Horticultural Commissioner Brock of Ventura County writes:

"In Bardsdale there is an old orchard in which one tree is noted for the bearing of its fruit in clusters, and in one cluster 26 nuts were found. Twenty-five were found in the cluster, and one had been broken off. This was on exhibit at Fillmore a few days after it was collected."

John T. Culbertson, horticultural inspector at Fillmore, Ventura County, writes: "Seeing your article of May 6, telling of the cluster of eight walnuts upon a single twig, I thought you might be interested to hear of some in our section.

"Mr. G. L. Armstrong, a thoroughly wide-awake walnut grower of Fillmore, cut from one of his Santa Barbara soft shell trees, a cluster of 25 well formed nuts of uniform size. It is not unusual to see as many as 14 in a cluster upon his trees.

"The present indications point to an enormous crop this season for this section. It is, however, difficult to say what per cent of the young nuts which have set will be injured by the blight.

"I cut a cluster of 12 paper shell walnuts from a tree in Mr. E. Ritzman's grove near Fillmore."

Mrs. Fred A. Rollins of Chino

writes: "In looking over last week's paper I see records of walnut trees, and as I have just a little better send the record. Have many with five to nine in cluster and ten and twelve, and one of fourteen, all in perfect clusters. This is on the Rollins ranch northeast of Chino on eight-year-old trees."

DRIED APRICOTS

Written for California Cultivator
By J. G. Berneike

The bulk of dried apricots has already passed into the packers' hands. The output was smaller than the crop estimate because much good fruit went to waste and poor fruit was discarded for fear it would not pay drying expenses.

While this statement is made regarding Orange County it applies probably with equal force to the whole state. Our Orange County fruit was generally good and the quality of the dried fruit is admitted to be good. In spite of this fact growers have received only from less than five cents to a trifle about six and one-half cents.

A small number of growers are holding for seven to eight cents per pound; one of these refused an offer of six and three-fourths cents. Pits have brought our growers from \$16.00 or less per ton up to \$23.25. But for the war they would have brought from \$30.00 to \$35.00 this year. Since only the grower who has a full crop breaks even on seven cents per pound for dried 'cots, and every grower with a light crop fails to pay expenses, it follows that practically every apricot grower in the state is a loser this year. Yet these apricots, bought at five to seven cents, will retail at 18 to 35 cents per pound, and some people still tell us that our marketing system is the best possible.

When the liberty bell rang out its peals for political freedom some larger bells were dumb. When the smaller growers voice their revolutionary ideas concerning economic betterment, some larger intellects tell them to hush. But the change is coming. We know how to raise apricots; what we need to know is how to get our pay for them after we have raised them.

PLANT LICE ABUNDANT

This season plant lice or aphids on trees and shrubs are more abundant than in many years. Weather conditions have been very favorable for their reproduction and very unfavorable for the reproduction of their parasitic enemies. Many of the aphids in normal years attracted very little attention. In normal years artificial methods of control must be used to keep them within bounds.

"In our experience at the Minnesota experiment station," says A. G. Ruggles of the division of entomology, "the extract of tobacco containing 40 per cent nicotine in the form of nicotine sulfate has been very effective. This material is on the market. One half-pint of this in 50 gallons of water is very effective if sprayed on the plant in such a way that every insect is touched with a small particle of the spray. This material is even more effective if mixed with whale oil soap—one pound of whale oil soap to ten gallons of the diluted nicotine solution."

An old colored woman boarded a street car and proffered the conductor five pennies for her fare. "I can't use them," he said gruffly. "Dat's all right, honey," she replied. "Jes' you give 'em to the company. They kin use 'em.—The Delineator.

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by inoculating your soil with FARMOGERM. The nitrogen gathering bacteria will make money for you by placing large quantities of nitrogen in the soil and on the roots of your legume plants. Farmogerm will cut your fertilizer costs. Use it this year and get "Bigger Crops," "Richer Soil" and greater profit.

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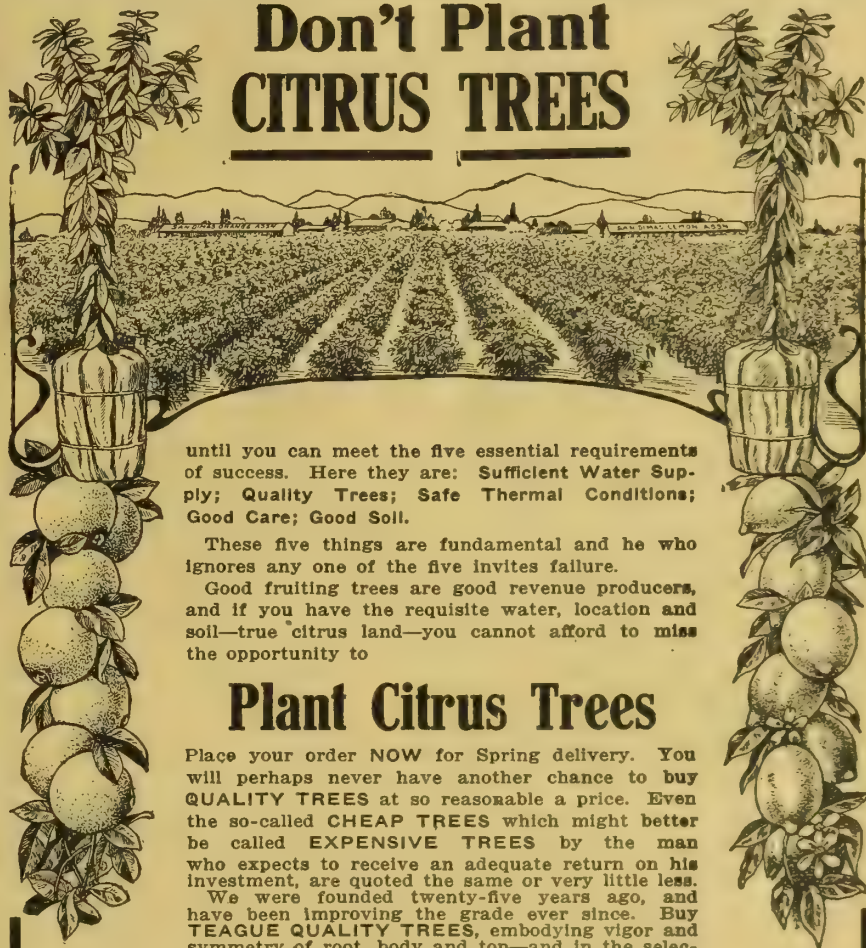
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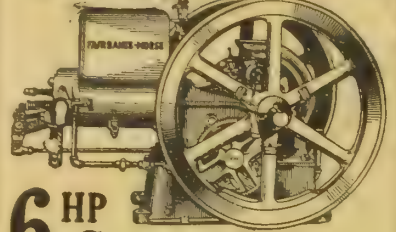
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Gallon can, 50c;

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Steps are being taken to reorganize Sacramento Valley Poultry Association.

The Lawn and



Flower Garden

VALUE OF TREES

Written for California Cultivator
By Ernest Branton



HERE is so great diversity of opinion regarding the value of street and highway trees that it is interesting to watch court proceedings regarding the same. Some years ago a local horticultural commissioner who was a very poor judge of values of ornamentals, and had a very meager knowledge of them, testified in a street-widening case that a specimen of Pircunia was worth \$600 when \$100, or even \$50, would have been a liberal estimate for this quick-growing and comparatively worthless tree, worthless largely because its pithy substance may scarcely be called wood.

Now comes a very interesting court case, not yet decided, on trial at Bridgewater, Massachusetts, where 17 old and stately shade trees have been killed by gas leaking from faulty main

which cities may pass ordinances of sufficient control.

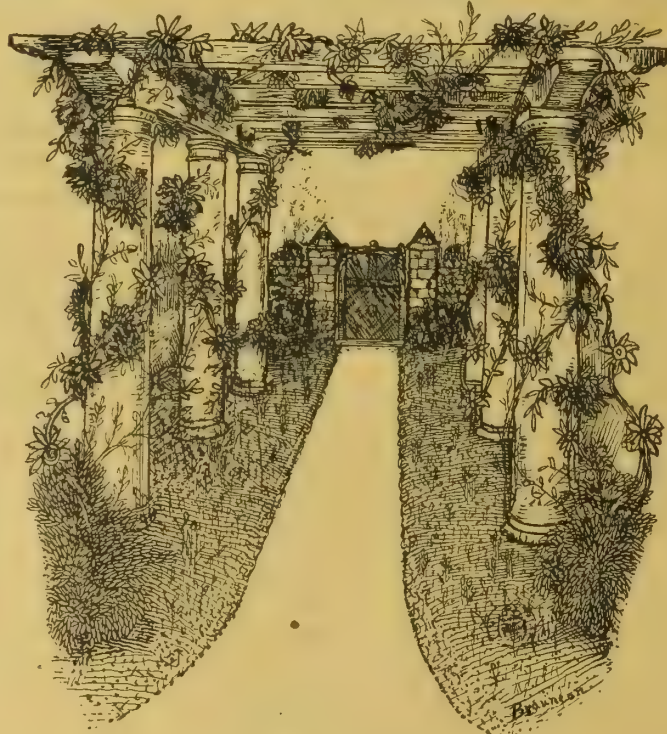
Rural Homes

California has nearly the whole world to draw upon for her ornamental plant life, and variety is not wanting. It holds good, then, that we should have gardens second to none in respect to quality and diversity of vegetation.

In the city conditions are hard for many tender plants, but out in the free air of the country all should find congenial atmosphere and surroundings if the plants are those suited to local climatic and soil conditions. Bear in mind that no section of the United States may grow semi-tropic plants except California, and then plant such class of vegetation. Do not plant what may be seen in all other states or you show a lamentable lack of appreciation of nature's most bounteous gift to the Golden State.

Lessons from Neglect

In the country may usually be found more striking examples of neglected trees and shrubs than in the city, for



CLASSIC PERGOLA

pipes. Suit has been brought by owners of abutting property, and in cases they have demanded as much as \$1,000 per tree. The gas company has confessed liability and conceded the value of trees to the extent of offering to remove the dead trees, plant others in their places and pay a substantial cash bonus for each tree killed—all of which is very pleasing to every lover of trees. But the local warden, acting as a sort of buffer between the contending parties, says the trees are worth much more than the sum offered and, what is still more significant, that the loss of large, healthy shade trees decreases the value of property at least 20 per cent.

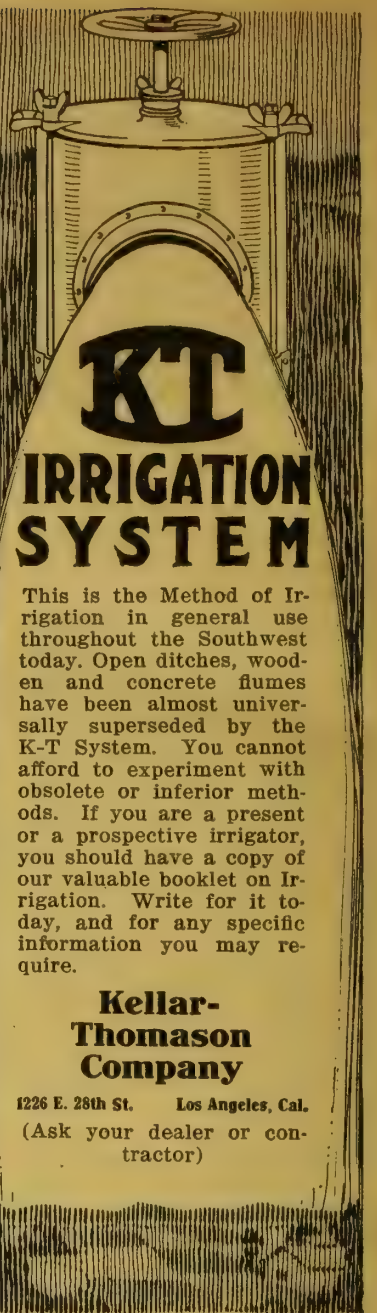
This expert opinion is especially gratifying to all who have worked long and faithfully to protect the umbrageous ornaments that align our streets and highways and to encourage the planting of more. Such legal action marks the "march of progress" in a most substantial way and in a very pleasing direction. This is a legal controversy which has not yet arisen in California and will not arise until we manifest a deeper interest and wider appreciation of tree values. Now that a few cities control all street planting activities and still fewer counties have assumed a like legal control, we are on the march toward higher ideals, yet still far from the goal of protection and safety to public trees. We sadly need better state laws regarding county forestry commissions and an enabling act through

houses in the city are usually abandoned only to make room for improvements, and thus the surrounding vegetation is soon destroyed. In rural districts new sites for the home are chosen, adjoining properties are added to one containing a fine house, and in many ways unconscious provision is made for submitting plant life to severe tests. In such places may be found valuable lessons for all who seek lists of plants for California gardens, that may be depended upon to thrive with a minimum of care and are therefore best suited to local conditions. Do not pass these neglected gardens by without learning something of value from them.

Value of Acacias

As one goes spinning along our great highways he cannot fail to note that next to the pepper tree, aside from the dual purpose eucalypt, come the acacias as dominant features of the landscape and home surroundings. Like the two others mentioned the acacias are extremely tough and hardy trees. Seldom is one seen in ill health or suffering from lack of care, food or water (the two latter terms being practically synonymous). They have flowers far surpassing in attractiveness those of most other trees because of their wholly sufficient number, there being no other tree that may be said to bear a solid mass of blossoms. As they are nearly

(Continued on Page 167)



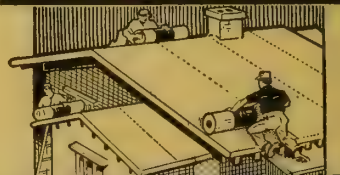
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ON THE MARINA AT THE EXPOSITION JUST BEFORE THE ASCENT OF THE AVIATOR

EVENTS THIS WEEK

MANY of the meetings held this week have much interest for the farmer, perhaps more for the scientist and farm expert. Amongst other things the Society for the Promotion of Agricultural Science met on August 9 and 10. The American Society of Agronomists met on the same days. The American Society for the Advancement of Agricultural Teaching and the American Farm Management Association also have been holding their sessions. Another congress which concerns us all is that of the International Congress of Thrift. Another association holding its annual meeting is the American Economic Association, which will end its sessions Saturday evening. The Pacific Highway Association of North America ends its sessions today. Holding the remainder of the week at Berkeley and at the Exposition is the Association of American Agricultural Colleges and Experiment Stations. Beginning today and continuing the rest of the week the California Association of Nurserymen will hold one of its most important sessions, and in connection there will also be held the meetings of the Pacific Coast Association of Nurserymen. Beginning tomorrow, August 13, and continuing three days, the American Association of Farm Institute Workers convenes. August 17-20 inclusive the Society of American Florists and Ornamental Horticulturists meets. On the same date the Florists' Telegraph Delivery Association holds sessions. On August 18 the National Association of Supervisors and Inspectors of Rural Colleges; the California State Veterinary Medical Association, August 30 to September 3; Society for Horticultural Science, August 31; International Congress of Farm Women, August 31 to September 3; the American Veterinary Medical Association, August 30 to September 3; the American Pomological Society, September 1 to 3.

AMONGST POULTRYMEN

The annual egg-laying contest, under direct supervision of Prof. Quisenberry of Missouri, is attracting large numbers of poultry people. The birds

are on their good behavior and some are making remarkable records. On the door of each pen is the name of the owner, and records may be seen as to the performances of each pen. Prof. Quisenberry is now working for the great poultry exhibition which will be held November 18 to 28. Entries for these exhibits must be made not later than October 15. Poultry people should bear these dates in mind.

It is anticipated that this exhibition will bring together the greatest number of pure-bred poultry ever exhibited. Several eastern states are planning through their departments of agriculture to transport the birds without cost to the poultry owner. It is presumed that California poultry people will not see all of the medals and cash prizes go east of the Rockies. Hence a large number of coast exhibits will probably be made.

LIVESTOCK SHOW DATES

Exhibition dates which will be of interest to live stock people are: Horses, mules and asses, September 30 to October 13; cattle, beef and dairy, October 18 to November 1; sheep, goats and swine, November 3 to November 15; carlots of live stock, November 11 to November 14; poultry and pigeons, November 18 to November 28; dogs, cats and pet stock, November 29 to December 1; children's pets, December 1 to December 3.

Entries for these classes are as follows:

Group A, horses, mules and asses, September 1; group B, beef cattle, September 15; group C, dairy cattle, September 15; group D, sheep and goats, October 1; group E, swine, October 1; group F, poultry and pigeons, October 15; group G, dogs, October 25; group H, cats, October 25; group I, pet stock, October 25; group J, children's pets, November 15; carlots of cattle, sheep and swine, October 10.

In Barn No. 2 are housed the exhibits of swine made by the American Berkshire Association, as the only exhibit of pure bred swine at present on the exposition grounds. Other exhibits of swine will be installed shortly. In the corrals is shown a very important exhibit of utility beef animals in which high grade Herefords, Shorthorns and Aberdeen-Angus steers are contrasted with California "Natives" and Mexicans in order to show profitable and unprofitable type of beef producing animals. Besides these and also in the corrals are exhibits of sheep which are shown for the same purpose.

In the poultry building are shown utility exhibits almost exclusively, as the fancy will have its opportunity in the Poultry Show which will occur from November 18 to November 28.

Many Types of IRRIGATION GATES

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ARMCO IRON
California Corrugated Culvert Company
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We Will Furnish You FREE ESTIMATES

Deep Well Turbine Pumps and All Other Types in Operation

SEE THEM AT EXHIBIT OF
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MACHINERY HALL

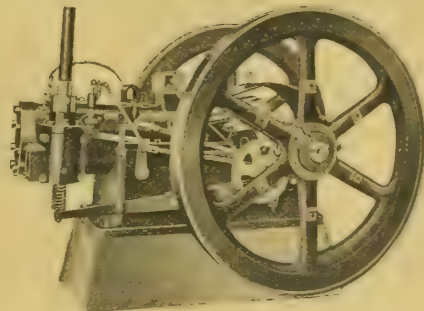
The Egg Laying Contest is being conducted with 600 birds. There have been installed a considerable number of bantams of many varieties. There are now being installed a considerable number of pheasants of different varieties, while the Japanese long-tailed chickens and the Japanese bantams or Silkies continue to be the center of interest.

There is now installed an egg candling apparatus, and daily demonstrations will be given at 4:30 p. m. for the benefit of the visitors. Also there is now in operation an electric brooder which will be the subject of daily demonstrations.

In this same building are shown about 1,000 pigeons of different varieties; these will include the Parlor Tumblers and the high-flying Tumblers and Rollers, which will be on exhibition at stated hours; also a loft of young racing Homers now in training for long-distance races to be held this fall.

Time your visit to the exposition so as to be sure to get in one clear night. Occasionally the fog rolls over the San Francisco hills until less than half of the Tower of Jewels is visible. On such nights there are no fireworks—and those fireworks are worth seeing.

Parents too often fail to provide fun in the home where it is so much needed. Half an hour of merriment will blot out the remembrance of many a care and annoyance during the day.



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General Agriculture



FETERITA

Written for California Cultivator
By John W. Gilmore



FETERITA is one of the newer crops introduced into this country from Sudan, Egypt, in 1906. It belongs to the Durra type of grain or non-saccharine sorghums and is consequently sometimes called Sudan Durra.

It has many qualities which render it suitable for conditions in California, prominent among which may be mentioned its earliness, its drouth resistance, its non-shattering qualities, and the fact that so far as our information goes it is not so liable to be destroyed by the birds as some of the other varieties of this crop. Its quality of earliness is especially advantageous because of our hot, dry summers in the interior valleys. If planted at the proper season it will come to maturity under proper culture methods before the moisture supply of the soil is exhausted by evaporation, whereas of some of the longer maturing varieties, like kafir, this is

not true. Its drouth resistant qualities render it well adapted to many of our foothill lands, especially where the topography is such that irrigation cannot be practiced. While it will mature on a minimum amount of moisture for such crops, yet it responds readily to irrigation, and its yield of both forage and grain is materially increased when one or two irrigations can be given.

Feterita does not shatter like some of the grain sorghums, especially during the earlier stages of its ripening. Its head is close and compact, and possibly for that reason it does not lose its seed, as is sometimes the case with other varieties of grain sorghums. While the grain is very useful for feed, being relished by most livestock, yet the birds do not seem to care for it, especially in its earlier stages of ripening as they do for other members of this type of plants.

Planting

All of the grain sorghums, and this one in particular, must not be planted until after all dangers from frost have

passed and until the ground has become sufficiently warm to give it the feeling of warmth, rather than coolness, when handled early in the morning. The seeds of this plant respond to about the same conditions as do beans. If they are planted during the earlier season when the ground is well supplied with moisture and is cold, the major portion of them is likely to rot, thus causing a poor stand or no stand at all.

On the other hand they should be planted as early as the conditions of temperature and moisture mentioned above will permit. If planting be delayed beyond the opportune time the ground will lose so much of its moisture before maturity that the harvest will be materially lessened. There is probably no crop upon which more thought should be exercised in planting than this one.

Feterita may be planted for two distinct purposes, namely, for grain or for forage. Under some circumstances, especially where the soil is strong and there is sufficient water supply, it may be planted for both forage and grain. If planted for grain, the land should be thoroughly and deeply prepared early in the spring and should be harrowed at frequent intervals to destroy all early germinating seeds and to render the surface of the soil in a good friable condition. The seed should be planted at the rate of from six to eight pounds per acre

in rows from 30 to 42 inches apart, the width depending somewhat upon the strength of the land, the moisture supply, and the kind of implement at hand for cultivating. The seed may be planted with several implements, including the corn or bean planter, or the regular grain drill. When planted with a regular grain drill usually a sufficient number of tubes are stopped in order to give the rows the proper distance apart. The plants should stand from six to eight inches apart in the row, or where the soil is deficient in moisture from 10 to 12 inches apart is not too far. The plant tillers freely and produces an abundance of leaves, and because of these conditions is a little likely to lodge if growth conditions should be good, especially in the latter part of its growth. The seed should be planted sufficiently deep to get them within contact of the moist soil in order that germination may be prompt and vigorous.

When planted for forage only, the seed is usually sown broadcast or drilled, as with grain, using under such circumstances from 28 to 35 pounds per acre. When planted in this manner the plant does not grow as large and stalky as when planted in drills, and as a general rule feeding usually begins as soon as the plants are two or three feet high. Under conditions of early feeding the plant will take on a second growth, and where the land is strong and moisture abundant, two or three cuttings of forage may be secured during the year. Some precaution, however, must be exercised toward the end of the growing season regarding the feeding of plants that have been stunted in their growth, owing to poor soil conditions or an unfavorable moisture supply. A few instances are on record where animals have been poisoned from cyanide formed in the plants under conditions unfavorable to growth. It is generally observed, however, that quite as much nutritive material may be produced per acre where the crop is drilled and cultivated as under circumstances of broadcasting, even though two crops per year are secured.

Cultivation

With this crop, as with many others, thorough preparation of the land before planting constitutes at least half of the cultivation necessary to bring the crop to maturity. During the growing period of the crop cultivation should be sufficiently frequent to insure weed destruction and the conservation of moisture in the soil. Cultivations for such purposes will be sufficiently frequent to keep the surface of the soil in good physical condition. Usually the earlier cultivations may be deeper than those in the latter part of the growing season. Deep cultivation in the latter part of a season is detrimental because it is likely to destroy many of the shallow roots occurring near the surface. Usually four or five cultivations are sufficient to keep the crop in good growing condition. As stated above, this crop is more often planted upon land which cannot be irrigated, but when water is at hand one or two irrigations may be given during the growing season. If only one irrigation can be given this should take place at the time the heads are appearing from the sheath.

Harvesting

When the crop is grown for forage as well as for grain, it is most advantageous to cut with a corn harvester and shock it in the field. Feterita has the characteristic of ripening its seed a little before the leaves and stems are mature, and consequently if the heads

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Revolutions, More Power, Less Fuel

THE big, dominating feature of this Oakland "38" is its high-speed motor. "High-Speed Motor" applies entirely to the motor and not to the speed of the car. Light, quick power pulses that melt into a continuous flow—eliminate vibration and give you a store of power on tap for any speed of the car—creep at three miles an hour or go the limit. Quick "getaways"—hills, mud or sand—steady road running.

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Oakland standards of uncompromising quality. Delco electric starting, lighting and ignition; Oakland-Stewart vacuum gasoline feed.

Lots of room for five passengers.

The Oakland line is complete. Your dealer is now demonstrating this Model "38" and the new light six. Very shortly we will announce another master of its class, to be a large seven-passenger touring car.

Oakland Motor Company
Pontiac, Michigan

This
Oakland "38" \$1050
High-Speed Motor



are sufficiently ripe for seed the stalks are still in good forage condition. If it is desired to thresh out the grain this may be done by presenting the tops of the bundles to the cylinder of a grain thresher, taking care that the motion of the cylinder does not jerk the bundle in. On the other hand the heads may be cut by hand from the bundles and threshed or fed separately. When cut for forage the proper time is indicated by the hard dough stage of the grain. When cut for grain the seeds should be thoroughly ripe. In many instances the heads are cut by hand while the crop is standing in the field and fed separately to livestock either threshed or unthreshed. The stalks are left in the field as pasture for both hogs and cattle, the hogs picking up the small heads that have been left, and the cattle making good use of the standing stalks. This is a very common practice also with other grain sorghums and is employed extensively in Imperial Valley.

This crop makes excellent silage when cut at the proper time as indicated above for forage. If allowed to get too ripe it may still be siloed to advantage by adding water to the material as it goes into the silo, or immediately afterwards.

Uses

Feterita compares favorably in composition with the other varieties of grain sorghums and is almost equal in that respect to corn. It is usually estimated that 100 pounds of feterita grain is equivalent to 90 pounds of corn. Feterita produced at Davis in 1914 analyzed as follows: Water, 11.35 per cent; protein, 9.49 per cent; fat, 2.12 per cent; carbohydrates, 74.21 per cent; crude fibre, 1.33 per cent; ash, 1.50 per cent.

This grain has been found adapted to feeding practically all classes of livestock, including poultry. When fed to hogs and horses it should be cracked in order to secure best results. In some instances the grain has been ground into meal and this made into bread and cakes as a human food, and has been pronounced satisfactory.

WASHING NAVEL ORANGES

(Continued from Page 149)

house-handling methods becomes imperative in order to reduce the chances of mechanical injuries in the fruit to a minimum. The packing of moist or wet fruit provides conditions that are very favorable for the development of decay in injured fruit.

During the orange-shipping season of 1914-15, an investigation was conducted by the bureau to determine the relation of handling to the occurrence of decay resulting from the methods used in the washing and subsequent drying of the fruit. The work was undertaken at the request of the Citrus Protective League and packing house experiments were made in ten different houses during the season.

Washing and Drying Experiments

The handling experiments were planned to make a direct comparison of fruit very carefully picked by the bureau men with the same kind of fruit handled under ordinary commercial conditions. The fruit was packed and held in the packing houses, and the percentages of decay in the various lots were determined by inspection at the end of two weeks. The different lots included carefully handled and commercially handled fruit washed in the ordinary machinery,

part of which was packed while still moist or wet and an equal amount of fruit which was thoroughly dried before packing. Part of the same fruit was packed without washing or brushing. Those experiments were designed to show the effect of the washing process on the keeping quality of the fruit and to furnish data indicating the percentages of the decay due to the wet or moist condition of the fruit at the time of packing.

The data show that the percentage of decay in carefully handled fruit was increased from 1.8 per cent in the unwashed fruit to 3.4 per cent in the washed and thoroughly dried fruit, and was increased to 3.9 per cent in washed fruit packed wet. In the ordinary commercially handled lots the average percentage of decay in the unwashed fruit was 8.3 per cent. Washing followed by thorough drying increased the decay to 11.4 per cent, and in the same fruit packed wet the average decay was 13.9 per cent. The difference in the percentages of decay developing in the wet and dry-packed fruit was considerably greater during the period of cloudy or wet weather early in the season. The figures given are the averages for the whole season.

Relation of Handling to Decay in Washed Fruit

The results indicate that the losses from decay resulting from packing im-

properly dried oranges are directly in proportion to the care exercised in the methods of handling. Fruit showing a high percentage of mechanical injuries develops the maximum amount of decay following washing without thorough drying. In the fruit that was picked with sufficient care to avoid serious injuries there was a comparatively small increase in the decay in the lots that were washed and not thoroughly dried before packing. It is probable that a greater difference in favor of very thorough drying would have been shown if more efficient methods of handling the specially dried lots had been available during the early part of the season.

Methods of Drying

By heating the air blast used in orange dryers the relative humidity of the air is lowered, which increases its capacity for absorbing the moisture on the surface of the fruit. Experiments were made to determine the time required to dry the fruit under different conditions of temperature and humidity. The humidity of the air was varied by the use of a heating apparatus and by passing the air through a compartment containing calcium chloride.

The most rapid evaporation of the moisture on the fruit took place with dry air at a temperature of 130 degrees Fahrenheit. The time varied from approximately 11 minutes with an air blast having a temperature of 55 degrees and a relative humidity of 70 per cent to about one minute with air at a temperature of 130 degrees and 14 per cent humidity. The use of calcium chloride in conditioning

the air has not yet been demonstrated to be as effective or practicable for this purpose as heat. The temperature of the fruit was not increased materially after two minutes in an air blast at a temperature of 130 degrees.

Experiments were conducted with two different types of dryers. In one of these the roller conveyor was used and the air blast was forced through narrow openings above the fruit which extended across the conveyor parallel to the rollers. The openings were formed by air nozzles about three inches wide, the air apertures being about one-quarter of an inch in width. In the other device a rope conveyor was used and the fruit passed through narrow trough-shaped runs, the air blast being forced on the fruit from the sides and bottom of the runs.

In the experiments conducted with the dryers it was found that infection with blue mold may be increased if the dusty air of the packing house is blown on the fruit in the air blast. In an efficient system of drying the cost of heating the air to a temperature of 130 degrees should not exceed one dollar per car of packed fruit.

This circular is issued in order to present the results of the investigations promptly at the close of the season's work. The cooperation of the citrus associations and particularly the Pomona Fruit Growers' Exchange was given to the bureau investigators throughout the work. In addition the California Fruit Growers' Exchange and the Citrus Protective League shared the expense of conducting the investigation with the bureau of plant industry.

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Agriculture

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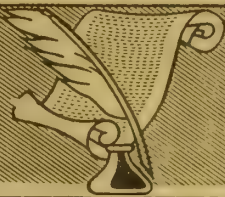
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loss through dishonesty of any adver-
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responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**SELLING RAISINS**President Madison of the Asso-
ciated Raisin Company announces the
largest sale of export raisins ever
made. A 3,000-ton order has been re-
ceived from England and is being fill-
ed. It is to be hoped that this general
order is merely a forerunner of large
shipments which will be made during
the next few months. This shipment
is made up almost entirely of loose
Muscatels. The order called for a
liberal portion of seedless raisins, but
as none are now available seeded
raisins were sent to give the English
people a taste of California seeded
stock.**FUMIGATORS AT SCHOOL**This is a week in which fumiga-
tors of the state are attending the
first school of fumigation. Pomona
has been honored by this session, and
the recitation rooms and laboratories
in her high school building are used
for the purposes of this school. In
addition practical field experiments
are being made at night with two
forms of fumigation machines and
with the original form of pot genera-
tor. Prof. Woodworth of the state
university is leading in the lectures
and laboratory work, but addresses
are also being made by practical field
workers in fumigation.Fumigation has been a factor in or-
chard work since 1887, or even earlier,
though it was '88 or '89 before it be-
came general in orchard work, but
in spite of this quarter century of field
work there are many questions yet to
be solved. The purpose of this
school is to take a material step in
the solution of the fumigation prob-
lem. Another week we will endeavor
to condense some of the lessons of
this five days school in a few columns
for the Cultivator.**MORE ORANGES**Discouraged sugar producers of
Louisiana are turning to some fruit in
lieu of sugar cane and thousands of
acres of oranges are being planted.
One orchard of 7500 acres is being set
out, and it is estimated that within the
next two years the output of oranges
from the extreme southern part of
Louisiana will be in excess of a mil-
lion boxes. With a 47-cent freight rate
from Louisiana and a 71-cent rate
from Florida, California with its \$1.15
rate must produce a better quality of
the best orange on earth.**BEET SUGAR**California this year planted
128,900 acres to sugar beets. This is
nearly 20,000 acres more than her
planting of last year. Her last year's
production of sugar was 169,000 tons.
Colorado still produces the greatest
tonnage of sugar beets, having planted
this year 171,000 acres. Her last year's
tonnage was 220,799. Michigan stands
third in beet sugar production, her
planting this year being 146,000 acres.
This is greater than California's acre-
age, but Michigan's production is much
lower per acre. Last year she secured
from 111,000 acres only 110,000 tons.
Utah comes fourth, with Idaho produc-
ing nearly the same amount.**CALIFORNIA OIL**California's lead as an oil pro-
ducer was increased during the year
1914. In that year she produced 2,000,-
000 barrels more oil than in the pre-
ceding year. The total for 1914 was
99,775,327 barrels. The next largest
producer was Oklahoma, some of
whose wells made record productions
during the past two years. In 1914
her wells yielded 73,621,724 barrels.
Pennsylvania, which was formerly the
great oil producer, is now giving only
about 8,000,000 barrels annually. In
fact, she is now led by Ohio, which
is producing eight and a half million
barrels annually. Texas leads both
of these states with 9,000,000 barrels.
California's oil has been a great fac-
tor in her wonderful growth during
the past few years.**CERTIFIED SPUDS**One step has been taken by the
potato growers of California which we
believe will mean much to the future
of the industry. It was discussed at
some length at the recent potato grow-
ers' convention held in conjunction
with the State Growers Convention at
Stanford University. The certification
is to be secured from the state horti-
cultural commissioner after the grower
has filed with him the proper creden-
tials. The seed must be selected care-
fully and when it is being grown cer-
tain notations must be made and rec-
ords kept. This will result ultimately
in a hardy strain of seed which should
improve the quality of California prod-
uctions, and quantity as well. The po-
tato growers have been slower than
producers of most other crops in tak-
ing this advance step in seed selec-
tion.**SPRAY EARLIER**There have been many requests
for information as to how to handle
peach blight and various insect and
fungous troubles of deciduous fruits.
It seems that these have come more
generally this year than in former
years. For this we can only pass along
the word to spray and spray more in-
telligently than in the past. The fact
that fruit of peaches is infested withlittle brown spots extending a short
way under the skin indicates no spray-
ing or improper spraying some months
before the fruit was set. For many
of these troubles spraying should be
done early in December or as soon as
the leaves drop and another spraying
with Bordeaux shortly before the
blossoming time in the spring. It is
not intended on this page to give spe-
cific directions, but we will say that
another issue of the Cultivator within
the next few weeks will give particular
attention to many of the pests which
confront the fruit grower and to the
best methods of handling.**SULPHUR a FERTILIZER**Professor Reimer of Oregon
College has been for some years mak-
ing a study of the use of sulphur as
a fertilizer and he claims that care-
ful observation has shown that the
benefit from the application of super-
phosphates has come more from the
sulphur content in the sulphuric acid
used in making available the plant
food of the phosphate rock than from
the phosphoric acid. This was proven
out by the use of a form of phosphate
which was entirely available, at the
same time using a sulphate which
yielded its sulphur to the plant,
and in every case it was found that
the sulphate gave better returns.
Later experiments were made by ap-
plication of crude ground sulphur, and
the check plots showed remarkably
satisfactory results. It has been
known for some years that sulphur
was a necessary ingredient of nearly
all plant life, but it has been taken
for granted that it was supplied in
sufficient quantity in all soils. If re-
sults obtained by Prof. Reimer are
confirmed by other experiments it
may be that we will all soon be making
applications of crude sulphur or using
a complete fertilizer in which sulphur
is an ingredient.**COMPETING WITH OURSELVES**"The growers themselves are
one of the worst elements that have
worked to demoralize the peach mar-
ket. They have brought about the
present condition by establishing co-
operative sales agencies that do not
control the product nor have any re-
striction as to the price at which the
goods are to be sold."In the first place, these cooperative
agencies have no fixed cost price. In
the second place, they have no money
invested, and their only object is to
sell and sell."The above is from the remarks made
by President Madison of the Asso-
ciated Raisin Company. It is unfor-
tunate, but true nevertheless, that
fruit growers are engaged in com-
petition with each other, and this in
a larger way is true of individual co-
operative associations. Cooperative
effort is made to secure fair treat-
ment for the producer. Neighboring
cooperators enter the field with no
idea of cooperating with each other
and consequently there is almost cer-
tain conflict and loss. A suggestion
was presented some months ago in
these columns by Mr. Campbell of a
large Tulare County cooperative asso-
ciation that cooperators work to-
gether in the disposal of their crops.
In other words, we need a large clear-
ing house which shall aid the vari-
ous cooperating associations to work
in harmony instead of tearing each
other down. Whether the new federa-
tion of state associations will aid in
this we do not know, but we believe
that organization will be a step in
that direction. If it is not—or in any
case—cooperators should think seri-
ously along the line of making their
cooperation more effective.**Agricultural Notes**The dairy production of the prov-
ince of Alberta, Canada, is valued
at \$10,500,000.There are still a few wild buffalo
left on the continent; a herd of 400 to
500 is reported in the northern part of
Alberta, Canada.The 18,000 regularly established
libraries in the United States contain
more than 75,000,000 volumes, or an
increase of 20,000,000 since 1908.The United States bureau of fish-
eries last month forwarded to Kobe,
Japan, a shipment of 100,000 eggs of
the rainbow trout from its hatchery
in California.A large list of foreign countries have
signified their intention of making
exhibits at the International Dry Farm-
ing Congress and Soil Products Exposi-
tion to be held in Denver, September
26 to October 10.Inspectors of the Growers' League
of the Pacific Northwest estimate the
apple crop at 78 to 80 per cent of last
year's abnormally large yield. Wine-
saps are reported as bearing more ev-
enly than any other variety.England has authorized the sale to
United States buyers of uncombed
wool brought from Australia. This
wool is to be processed in the United
States because of lack of labor in
England and is to be returned to Eng-
land in the form of tops and yarns.The Liberty bell, which was sent
from Philadelphia to the San Fran-
cisco exhibition, made the journey in
a car specially designed and equip-
ped. It was a steel gondola car equip-
ped with specially designed springs
and festooned with electric lights
which brilliantly illuminated the bell
at night.The recent Fruit Growers' Conven-
tion of the provinces of British Col-
umbia and Alberta in Canada, after
a full investigation of methods of dis-
tributing British Columbia fruit unan-
imously indorsed a resolution rec-
ommending the dominion parliament
to appoint a royal commission to in-
quire into the fruit distribution and
marketing methods of Canada. The
movement is regarded as most
radical.A society called "Junta Agricola
Industrial" has been organized in
Port Limon, Costa Rica, to encourage
agricultural industries. Its first ef-
forts will be to furnish free of cost to
all planters and farmers all kinds of
seeds of vegetables and grains that
will grow in that climate. The ef-
fort is to build up new industries to
take the place of the banana indus-
try, which is being killed by the bana-
na disease.Potato growers of Russia are inter-
esting themselves in potato drying
mills. Since the action of their gov-
ernment in curtailing the manufacture
of alcoholic drinks the growers are
forced to find a new outlet for their
potatoes. Germany makes extensive
use of dried potato products, in flour
and for stock feed. About 500 potato
drying mills have been established in
Germany during the last ten years,
their number since 1904 having grown
80 per cent.Banana production is the best estab-
lished industry on the Atlantic Coast
of Nicaragua. In 1914, 1,911,000 bunches
were shipped. This year banana
disease and commercial depression
have created a very serious sit-
uation for the small growers who
have given their entire attention to
this one crop and they are forced
to pay high prices for American can-
ned goods and the necessities of life.

Agricultural News Notes



of the Pacific Coast

Northern California

Esparto's Almond Festival is to be held September 4.

The almond crop over the state is reported as being very light.

About 80 per cent of the rice milled at Gridley has been shipped to Porto Rico.

A number of Oroville peach growers are making refrigerator shipments of peaches to Chicago.

The Official Dairy Instructors' Association convention met in San Francisco, Saturday, August 7.

Several successful experiments have been made in tea growing near Hayward, in Alameda County.

Sutter County peach growers are receiving a few offers of \$8 to \$12 per ton for their canning peaches.

Two thousand nine hundred and twenty-six autos were registered in the state during the month of July.

There is talk of turning the old Sperry flour mill at Marysville into a rice mill, to be managed by growers.

Santa Rosa grange is making big plans for the entertainment of the national grange at the time of the national convention.

Prune growers of Sutter County report an unusually heavy demand for the dried fruit. First shipments will be made within the week.

Farmers of Humboldt County, through their farm bureau, recently purchased 300 tons of alfalfa from one ranch at Dixon, Solano County.

Answering the question as to why they took short courses at the university last fall, 24 per cent stated that it was because of newspaper articles.

The board of supervisors of Nevada County has decided to make an exhibition of fresh fruit in competition for prizes offered at the Panama Pacific exposition.

Santa Clara County prune growers are reported to be holding on to their 1915 crop until they are sure of good prices. They anticipate a good fall export trade to Europe.

Rice farmers at Richvale, Butte County, are planning to form a marketing pool. It is hoped also that Gridley and Biggs rice growers will join in this marketing effort.

Twenty carloads of Gravenstein apples were shipped from Sonoma County last week to South America. The apples go first by rail to New York, then by steamer to Buenos Ayres.

Salmon packers report that last year's output is all sold, much of it going to England and Australia. There has also been a 40 per cent gain in salmon sales to the west coast of South America.

Members of the rivers and and harbors committee of congress recently visited the Yuba and Sutter County district to acquaint themselves with conditions along the Sacramento and Feather Rivers.

The California Nurserymen's Association and the Pacific Coast Association of Nurserymen will convene at the Civic Auditorium, San Francisco, Thursday morning, August 12. Sessions will last until the 16th.

Central California

The Merced district fair will be held September 23-25.

Porterville has the largest Valencia crop in its history.

The cannery at Selma is running with a crew of 500.

San Joaquin Valley Day at the Panama Pacific is Saturday, August 14.

Oakdale, Stanislaus County, will hold a harvest festival, September 14-18.

Carload shipments of Thompson Seedless are being made from Sanger, Fresno County.

Merced County has just purchased \$100,000 worth of state road bonds to complete the lateral into Mariposa County.

Several carloads of watermelons will be sent to San Francisco for free distribution on San Joaquin Valley Day, August 14.

The yield of Turlock cantaloupes this year is estimated at 1000 cars. About 650 cars of watermelons will also be shipped.

A machine that looks something like a header is being operated on the Miller & Lux ranch near Los Banos to catch grasshoppers.

The California Associated Raisin Company is selling its "Sun Maid" raisins in cartons showing a girl's head set in the light of the rising sun.

A Porterville company has contracted with a New York firm to furnish \$50,000 worth of alfalfa hay. It will be shipped through the Panama canal.

Announcement has been made by the Fresno district fair association that \$380 will be awarded in prizes to women's clubs exhibiting at the 1915 fair.

A new citrus packing house is in course of construction at Sultana, Tulare County. It is being erected by the newly organized Northern Tulare County Citrus Association.

The Watsonville Apple Distributors have provided for a three-eighths inch variation in circumference of apples to be packed at Watsonville under the terms of the standard pack law.

The effort made in Kern County to form a cow-testing association has been dropped for the time being, as not enough members signed up by August 1, which was the final date set for securing membership.

The report of the county assessor of Stanislaus County shows that the acreage planted to wheat this year is four times last year's acreage. The report also shows an increase of over 13,000 cattle in the county in the same period.

An examination was recently held at Watsonville to secure inspectors to enforce the fruit standardization law which goes into effect on August 7. It is expected that about ten inspectors will be needed in Santa Cruz County to enforce the law.

Fruit growers of the Aromas district in San Benito County have formed an apple distributing association and expect to have a state inspector appointed soon to examine and stamp all boxes sent out of the state.

Southern California

Exhibits intended for the Ventura County fair must be entered by August 14.

A train of 25 carloads of cattle was shipped last week from Holtville to Kansas City.

Walnut growers of the Puente Valley of Los Angeles County expect a large crop of nuts.

One drying yard at Pomona, Los Angeles County, is drying apricots at the rate of 40 tons a day.

The eighth annual flower show of the Pasadena Horticultural Society has been set for October 28-30.

The chamber of commerce of Northern San Diego County will hold its next meeting at Julian August 11.

The farm bureau local at Saticoy in Ventura County is preparing a petition to secure a flood control district.

A school of fumigation was conducted at Pomona this week by Prof. Woodworth of the state university.

San Luis Obispo County has a horticultural commissioner. He is Carl Nichols, the first man to hold the position.

Peach growers in the district about Chino, San Bernardino County, have decided to organize a cooperative company and build a cannery at Chino.

Valencia growers of Covina are feeling very happy over the prices now being received. Much of the fruit is, however, being held for the September market.

The blackeye bean crop of the Yucaipa Valley of San Bernardino County is the largest yet grown in that county. The apple association will handle the bean crop of its members.

Twenty lima bean growers of the San Joaquin ranch in Orange County have appointed a committee to meet growers in Ventura County to discuss plans for securing better marketing conditions.

Approximately 20,000 acres is planted to cotton on the American side of the Imperial Valley. The first cotton is about ready for baling from the volunteer crop. There has been no trouble from aphids in the fields this season.

The Farm Bureau Swine Breeders' Association of Ventura County will exhibit a convenient hog panel fence, a dipping vat and an automatic feeder, and will hold a vaccination demonstration at the fair grounds at Ventura on Thursday, August 26.

The 62½-cent freight rate per 100 pounds on all canned goods to Chicago and intermediate points, which became effective July 21, is now extended to the Atlantic seaboard. This extension of the rate will probably take effect within six weeks.

The recently organized Simi Walnut Growers' Association of Ventura County will sell its nuts through the Moorpark packing house. Officers of the new association are: M. L. Montgomery, president; J. Roup, vice-president, and R. E. Harrington, secretary-treasurer. R. D. Lloyd and T. G. Bard were elected directors in the board of directors for the California Walnut Growers' Association.

The Coast

The sugar beet crop of Utah this year is unusually heavy.

Candied apples are becoming very popular in Puget Sound cities.

Oregon's apple crop is now estimated at about 75 per cent of average.

A serious plague of grasshoppers has been devastating the Uinta Valley of Utah.

The cutting of green wheat for silage is being practiced at Sprague, Washington.

Grasshoppers are doing much damage in the orchards of the Okanogan district of Washington.

Arizona now has 20 local farm improvement associations. The newest to be formed is at Gadsden.

A number of Indian allotments in the Colville Indian Reservation will be sold at Nespelem, Washington, on September 15.

All cooperative creameries and cheese factories in Southwestern Idaho have joined in the South Idaho Dairy Products Association.

A dairyman of Hillsdale, Oregon, was fined \$100 recently for trying to sell to butchers meat from a cow that had died of milk fever.

Pear growers of Kennewick, Washington, are handling the biggest crop of Bartlett's ever grown there. The crop is estimated at 25 carloads.

Poultrymen of Washington will hold a meeting during the Spokane Interstate Fair. The date has been set as September 15. Many practical lectures have been scheduled.

According to S. P. Huss, manager of the Alfalfa Seed Growers' Association of Yuma, Arizona, there are about 5000 acres of alfalfa in the Yuma Valley now being harvested for seed.

In cooperation with the state college at Pullman, Washington, the federal government will this year make extensive investigation into the cause of smut explosions which proved so serious in grain threshing machines last season.

E. F. Sanguinetti, a dairyman of the Yuma Valley of Arizona, has just completed a new dairy barn which is completely screened and so arranged that as the cows come into the barn they are sprayed with water or other solution to take off the flies.

Prof. Stanley F. Morse of the Arizona agricultural college is recommending that farmers put in more tepary beans as he has confidence that the war demand and increasing knowledge of the worth of the tepary bean will create a good market.

Cochise County, Arizona, has 10 local farm improvement associations. The supervisors of that county have just voted to appropriate \$1000 for the support of the adviser for the next year. Cochise and Santa Cruz Counties join in support of one adviser.

The agricultural extension service of the University of Arizona has just completed a very successful dairy campaign in the Yuma Valley. Feeding and housing problems were the principal subjects of discussion between the university men and the dairymen.

Live Stock and Dairy



DETERMINING FEEDING VALUES

THE McAlister ranch at Chino recently requested information regarding feeding values for dairy stock. Mr. McAlister wrote:

"Regarding percentage of digestible nutrients in different feeds, what is the correct standard to go by, Henry's 'Feeds and Feeding' or the United

States Bulletin No. 22? For instance, Henry gives beet pulp only 69 per cent of digestible nutrients and the United States bulletin gives 72.2 per cent.

"What is the best guide in determining the food value of a concentrate, the percentage of digestible nutrients or the experiments carried out at the different stations? For instance, beet

pulp which contains a much greater percentage of digestible nutrients than bran was found to be only two-thirds as valuable for dairy cows at the Wisconsin station. Cornmeal, which contains a much greater percentage of digestible nutrients than beet pulp, was not found to be any better for lambs at the Michigan station. According to these arguments, therefore, bran is 50 per cent more valuable than corn. Is this correct or are the experiments misleading?

"Is steam-dried beet pulp more valuable than fire-dried beet pulp?"

Mr. A. M. Goodman of the United States department of agriculture answers these questions as follows:

"We have your letter of July 17 and the series of questions from one of your subscribers. We have asked the division of publications to send you Farmers' Bulletin No. 346, which deals with the subject of the computation of rations based on energy values.

"Farmers' Bulletin No. 22 was published in 1901. The table in this publication, showing the amount of digestible nutrients in American feeding stuffs, was compiled from analysis made previous to that date. The last edition of Henry's 'Feeds and Feeding' was published in 1912, and the tables of feeding values represent the average of all analysis up to that later date.

"The analysis of feeding stuff is a lengthy and laborious task, and it would be indeed unusual for two independent investigators to obtain identical results. They agree so closely, however, that to adhere strictly to one standard or to another would produce no appreciable difference in results. The feeds vary greatly in chemical composition and digestibility; this fact makes it unnecessary to compound a certain ration conforming strictly to the mathematically balanced ration because we have no assurance that the analysis of the feeds used would correspond with the analysis indicated in our standard tables of composition of American feeding stuffs.

"The feeding value of any roughage or concentrate depends upon the nutrients they contain; the condition of these nutrients as regards digestibility; the character of the ration in which it is fed and the physiological influence which they exert upon the development and production of an animal. The percentages of digestible nutrients shown in Henry's 'Feeds and Feeding' are based on chemical analysis, a method which takes into consideration the first two factors named. The ultimate results of practical feeding experiments are influenced by complex actions within the animal which can not be provided in a laboratory. The data gathered by chemical analysis are the best we have, and they are important, especially as a starting point for further investigations, but they are nevertheless inadequate results from which to draw final conclusions in regard to values.

"Very extensive feeding experiments have been conducted in Scandinavian countries, covering a series of years. In these experiments attempts were made to compare the feeding value of different grains. A large number of cows, kept under farm conditions, were included in these experiments. These experiments, directly or indirectly, made a comparison of these feeds for feeding to dairy cattle, and it was found that it required about one and one-fourth pounds of bran to give the same results as one pound of dent corn. Similarly it was found that

it required about 1.2 pounds of dried beet pulp to equal the feeding value of one pound of corn. This is probably as close a relative value as can be supplied.

"No investigation has ever been conducted by this department to determine the comparative values of steam-dried and fire-dried beet pulp. In this country, however, beet pulp is dried exclusively with steam. Fire-dried beet pulp would, I imagine, be apt to contain a certain amount of soot, burned material and ash."

[In addition to the above we will give next week a letter just received from F. B. Morrison, co-author with W. A. Henry of Feeds and Feeding.—Ed.]

DAIRY SURVEY

A rough survey of the dairy section of the South San Joaquin irrigation district is to be made by the farm adviser of San Joaquin County in order to get a birdseye view of the dairy situation of that part of the county so that the assistance of the dairymen in this section can be carried out more effectively. A cow testing and dairymen's association will probably be organized. Almost all of the dairies are small, averaging around 15 cows, and it is not known yet whether these dairymen can be included in the present San Joaquin County Dairymen's Association or whether a separate auxiliary association will be formed. The work is to be carried out by Assistant Farm Adviser Carl J. Williams and will probably require a month's time.

The San Joaquin County Dairymen's Association now has over 1000 cows on test. The county hospital herd was recently added to the list by the board of supervisors.

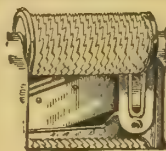
CENSUS OF HOGS IN GLENN COUNTY

The farm bureau of Glenn County is making a census of the hog industry and of the dairy industry throughout the various farm centers. From the information collected live stock associations will be formed for the development and protection of these industries. Among other things these associations will undertake to aid the purchaser of pure bred stock, will combat and try to keep out various contagious diseases, will interest itself in the interchange of live stock, the formation of cow testing associations, and in the marketing of live stock products. The movement in the county is receiving the support of the farmers.

VERMONT GUERNSEY MAKES RECORD

The American Guernsey Cattle Club sends out the record of the Guernsey cow, Novice Masher, bred and owned by E. R. Andrews of Putney, Vermont, which has recently completed a very noteworthy record. As a two and a half year old she was put on test in 1912, and made in the following year 7813.60 pounds of milk and 392.39 pounds of butter fat. She was tested again when she freshened in May, 1914, and during the following year she produced 13,649 pounds of milk and 706.97 pounds of butter fat, as a three and a half year old, carrying a calf seven months. Her highest production was made in the month of December, when she produced 67.19 pounds butter fat, and her lowest month's production was 54.15 pounds of butter fat, thus showing the persistency with which she completed her record.

Novice Masher 33365, A. R. 2609, was sired by Triple Champion 13067,



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A. R., who has seven A. R. daughters and several more are now under test. Her dam, Novice 3d, 23057, was purchased from the James M. Codman herd of Brookline, Massachusetts, and traces back to one of the earliest imported animals. Novice 3d's sire was Glen Masher 8812, A. R. He was also bred by James M. Codman and has two daughters in the Advanced Register whose records are 503.86 and 476.95 pounds of butter fat, respectively.

Novice Masher 33356, A. R. 2609, is the second daughter of Triple Champion 13067, A. R., to produce over 700 pounds of butter fat.

A WISE BANKER

In Ward County, North Dakota, is a banker who has shown true philanthropy and wisdom. He bought a carload of pure bred gilts and distributed them among the boys in the county who promised to care for them according to the advice of County Agent W. A. Peck. In the fall the boys could buy the sows at their actual cost, or they were to give the sows back to the banker, but they could keep the increase. Some of the boys bought their sows and those who did not had the pigs as their own. The banker bred such sows as were returned to him and again put them out with boys in the county.

In this way the boys learned how to handle pure bred stock, and were shown the superiority of blood and proper care. They came in personal touch with the county agent who was able to teach them much more than pig feeding. They got a substantial reward for their work, and a start that will mean much in the future.

The banker did a most excellent thing for the boys and for the county. The boys are the future farmers—and will have money to deposit in his bank, we hope. Is there not a suggestion in this for many a banker or successful business man who takes pride in his county? And may not a wise father get a hint that will keep his boys on the farm?—Successful Farming.

THE WAR HORSES

Nothing more strikingly proves that this is the age of gasoline and the motor car than the present European war. While millions of horses are being sent to the various armies in the field to become cannon fodder within ten days or a fortnight at the most, the fact remains that never was there a war where the horse was less prominent. I remember having seen the tribute of Gen. Robert E. Lee to the noble animals which played such an important part in our civil war. It ran like this: "There is many a war horse that is more entitled to immortality than the man that rides him." There spoke the true lover of horseflesh, a gallant gentleman whose grey charger was a conspicuous mark on many a battle field and bore his rider through many a fearful day and fray. Will the present war produce any horses as immortal as the mounts of Lee and Sherman, of Wellington and Napoleon? I doubt it very much.

You must not think for a minute that the horse is not figuring in the present war. He is on a very large scale. I have seen it stated that in the first seven months of the present war 3,000,000 head were used. For the complete mobilization of its army the German government required 800,000 horses. The French cavalry alone required a quarter of a million horses. For the British army in France and Belgium over 200,000 horses were transported across the channel. For the cavalry, artillery, and for transport service because of the lack of railways, Russia is using no less than a million horses. Austria put 250,000 into the field, while Turkey, Belgium and Serbia have contributed large numbers. Hence we cannot for a minute say that the

horse is not playing an important part in the present war. Yet it is a fact that the great bulk of the soldiers are being rushed into action or transported from one part of the battleground to another by railroad trains and motor cars, trucks, cabs, cars and even taxis being used to an extent undreamed of before the war broke out.

It is almost a foregone conclusion therefore that when commanding officers tear into action in taxicabs or lorries, no horse will win the immortality which General Lee conferred upon those of 50 years ago. History gives us many war horses which have won immortality. Let me outline you a brief list:

Wellington rode "Copenhagen" at Waterloo for 18 hours. This brave horse was buried with military honors. A simple marble tombstone says:

Here lies Copenhagen, the charger ridden by the duke of Wellington the entire day of the battle of Waterloo. Born 1808; died 1836.

God's humbler instrument of meaner clay.

Should share the glory of that glorious day.

Napoleon's "Marengo" lived for 36 years and was wounded seven times in the battle of Mont St. Jean.

Grant rode six horses, the most valuable being "Cincinnatus," for which he was offered \$10,000. This was the horse that Lincoln rode when he visited Grant at City Point just before the close of the war. "Cincinnatus" lived for nine years following the close of the war.

Gen. Robert E. Lee's "Traveler" was born in 1857 and came into Lee's possession seven years later. "Traveler" lived years after Lee, the horse dying in 1872.

"Sam" came into possession of Sherman at Shiloh and marched with Sherman on his way back from Vicksburg to Washington, via Atlanta, Savannah, Columbia and Richmond. Sheridan's "Rienzi" was presented him in 1862 and carried the brilliant general "From Winchester—twenty miles away." "Rienzi" lived until 13 years after the close of the war.

Practically every great general of our former wars had mounts shot from under them, but today the commanding officers are put afoot more often by punctured tires than by wounded war horses. The horses which the farmers of the grain belt are selling to the fighting nations in such large numbers are going across seas to be mere drudges and to fall before shot and shell within a fortnight on the average. They haul heavy cannon into action, bring up the commissary department and perform the menial work of war. Few of them will participate in charges like that of the gallant 600 at Balakava or when Sheridan rode from Winchester. They are playing a part in the war but the glamour of their role has been taken away. After all, what glamour or romance is there left in war in any of the various forms? Soldiers fighting hip-deep in water trenches, shot at by cannon ten or 20 miles away, dying without ever seeing the enemy, what glamour is there in this? Perhaps the awfulness of war, as it is being waged now, will mean the dawn, that much sooner, of the day of which the poet sang:

Till the war-drum throbbed no longer and the battle flags were furled,

In the Parliament of Man, the Federation of the World.—James M. Pierce in Farmer & Stockman.

A prospective buyer is more apt to come to a place where the entire community—or a goodly portion of it—specializes in the breed in which he is interested, than to one where there is only one breeder of that particular breed. His chances of getting what he wants are greater where there are a number of herds in the community than where there is only one.

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(Signed) A. W. MORRIS & SONS CORPORATION
By F. L. Morris."

IF YOU are in doubt about the value of Larowe's Dried Beet Pulp for feeding to your cattle, we suggest that you get a single 100-lb. sack from your dealer and test it on one cow whose milk record you know. It may be had either plain or with molasses. Ask your dealer for LAROWE'S.

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Citrus Fruits, by Coit (new).....	2.00	2.75	4
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Farm Animals, Hunt and Burkett.....	1.50	2.35	3
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115 No. Broadway, Los Angeles, Cal.

SWINE BREEDERS' EXHIBIT

The Ventura County Farm Bureau Swine Breeders' Association will exhibit a convenient hog panel fence, a dipping vat, an automatic feeder, and will hold a vaccination demonstration at the fair grounds, on Thursday, August 26, at 10 a. m. Dr. Cady of the United States department of agriculture and University of California, Dr. J. J. Streets, Dr. De Serpa and W. B. Parker, under the auspices of the Farm Bureau Swine Breeders' Association will demonstrate the use of the serum and virus as a preventive of hog cholera. The demonstration will be held at the Swine Breeders' Association exhibit. This demonstration will be of special interest to swine breeders.

PRONUNCIATION OF HOLSTEIN

"What breed of cattle did you say you were keeping?"

This question was put to me by the head of the dairy department of an agricultural college. "Holsteens," I said, sort of hesitating. I remembered that in German where the vowels ei came together the "e" was dropped and the "i" pronounced. I had heard it pronounced "Holsteens" so much that I believed usage established pronunciation. The professor kindly corrected my pronunciation, calling attention to the above rule. In the word Friesland, the "e" follows the "i" and is pronounced as is the German practice. I have even heard the word pronounced Holly-steen. Although a great many breeders seek to Americanize the pronunciation, by inquiry among leading men of the breed, I find that the pronunciation of "ei" as "i" in mine is the approved and correct one.—W. J. in Rural New Yorker.

CARE OF THE BULL

It is never safe policy to allow the bull to run at liberty in the pasture, either with the cows or by himself. It is necessary that he be given ample room for exercise, but this can always be supplied in the form of an especially constructed paddock designed for the purpose. Aside from the fact that a loose bull is always a potent source of danger, the promiscuous breeding which occurs when the bull runs with the other stock is to be condemned. The bull should always be handled with kindness and firmness and never given an opportunity to become acquainted with his enormous strength and destroying ability.

Every cow stable should have a system of ventilation to keep the air fresh and pure and the cows comfortable without exposing them to injurious drafts. If the smell in the barn is disagreeable at any time it indicates that the ventilation is deficient. At least 500 cubic feet of air space should be provided for each cow. The feed room, silo chute and hay chute should be conveniently located, but at the same time they should be in a separate room to keep the odor and dust out of the stable as much as possible.

The water tank or trough should be so convenient to the stable that it is unnecessary to expose the cows to extreme cold or severe storms. It should be kept clean and filled with an abundance of fresh, pure water to remove any doubt as to the ability of each animal to satisfy its thirst.

Higher quality animals are larger and more economic producers in their various lines; at the same time they sell for more than do animals of lesser quality.

Veterinary Queries



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Shetland Pony

Will you kindly advise through the Cultivator what to do for Shetland pony that scratches and rubs himself a great deal, mostly in summer months? Sometimes gnaws himself until he almost takes the hide off. Eyes also bother some. Have tried external treatments but to no effect.—Subscriber, El Dorado Springs.

Shetland ponies are not so susceptible to skin diseases or any disease as other animals. They come from a cold climate and where the humidity is very great so their hair grows very thick. In this dry climate they do not shed their hair freely and it is very irritating on a warm dry. We would advise clipping and scrubbing him all over with warm water and soap, then rinsing with clear water. It will also do him good to give a teaspoon of epsom salts in the feed once or twice a day.

More Skin Troubles

What can I do for a mare that seems to have some kind of itch? She has small lumps under the skin and the hair is coming off over them. When we take off the harness after working her she bites herself. She is fed alfalfa and oat hay and plenty of good pasture. Also feed rolled oats and condition powders but so far nothing helps her.—Subscriber, Es-

parto. Skin troubles are always more noticeable and annoying in summer than in cold weather. Most skin troubles are caused by mites or lice and can be relieved by external treatment, but when pimples or ulcers appear one must acknowledge that the trouble is from within.

First by thoroughly emptying the bowels and then giving something to thin the blood relief is usually given. Give a physic of aloin two drams, turpentine two ounces and raw linseed oil one pint. Mix and give at one dose. After this give a handful of epsom salts in the feed once a day. If this does not relieve in two weeks try giving one ounce of Fowler's solution of arsenic once a day for three or four weeks. By keeping the skin clean the other treatment will succeed much better, so scrub the animal with warm water and soap and rinse with clean water as often as once a week.

Where the livestock men of a community produce their animals to sell for breeding purposes, as well as to increase their production, cooperation is the greatest help possible to them. The community as a whole can be advertised, instead of the individual breeder. Thus the individual cost of advertising is cut down without cutting down the results which each one gets from the advertising. In fact, in the end, the individual gets better results from the advertising.

People are realizing more and more each year that farming is a business—that it is the greatest business in the world. And realizing that fact, they are coming to treat it as a business, instead of as a task or an occupation and nothing more. This means doing the business in a businesslike manner.

Poultry for Profit

THE GOSLINGS

IT is surprising that more farmers do not find geese a profitable side line. Breeders of long experience say that there is more money in geese than in any other class of poultry. The risk of loss is smaller than with ducks, turkeys or chickens. Geese are the healthiest of all fowls, seldom dying from disease.

Geese generally commence laying the latter part of March or the fore part of April. Our breeding geese have considerable exercise and they are kept moderately thin. We feed lightly during the laying season as overfat birds are almost worthless as breeders. Feeding has so much influence on the egg production that the latter can be controlled in winter and early spring when the fowls have to depend upon what food is given them. The opening of the laying season at our place is hastened materially by heavy feeding during the winter.

We provide large boxes or barrels for nests in the fowls' shed and then keep them penned in their yard until about nine o'clock. They generally lay during the early morning. If nests are not furnished or if the layers are given their liberty early in the morning, they may lay in secluded places where it is difficult to find the eggs. Some of the geese sometimes deposit their eggs in the floor litter and a search must be made for these.

The eggs are removed from the nests as soon as possible in cool weather so as not to become chilled. We keep them in a dry place and turn half over twice a week until needed for hatching. Goose eggs will keep for hatching 21 or 22 days when given proper care.

Until eight or ten days old the goslings are rather delicate and tender and they demand good care. The mother and little ones are placed in a dry, rat proof coop with a pen attached that contains tender grass. They eat grass almost as soon as hatched. The coop has a board floor,

for goslings cannot stand any more cold or dampness than a young chicken, and they must be kept dry and warm until four weeks old. They need to be looked after when a rain comes up, and ours are not turned out of mornings until the dew has gone off the grass. They are not allowed water to swim in at this period. As soon as the quill feathers have developed they are safely out of danger from water, though not from damp quarters. The drinking water is given in vessels they cannot paddle in.

After the first or second week the goslings have free range, though they are cooped at night for a while. A mother goose will go under shelter

POULTRY SHOWS

Riverside, Fourth Annual Poultry Show, Riverside District Fair Association, Oct. 5-9, 1915, E. I. Hammond, secretary, Riverside.

San Jose, Santa Clara Valley Association, annual show, Oct. 6-9, 1915, Chas. R. Harker, San Jose, secretary.

San Francisco, Panama-Pacific Exposition, international poultry show, Nov. 18-28, 1915, D. O. Livey, Panama-Pacific Exposition grounds, secretary.

Redwood City, San Mateo County Poultry Association, Nov. 11-14, 1915, Fred West, Burlingame, secretary.

Phoenix, Arizona State Fair, Nov. 15-20, 1915.

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klusman, secretary.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

until the goslings are well feathered out, after which she will remain outside with her brood night and day. Little goslings do not care much for a hen mother, who soon becomes disgusted and leaves her family. Shade is provided for the goslings in hot weather, for they might be sunstruck.

Goslings are unusually hardy and seldom get sick, so losses are few if they are protected from dampness. They are rapid growers and when chicks are of the size of quails, goslings of the same age weigh five or

six pounds, and the profit from them will be large if sold early, due to the fact that the greater part of their living is derived from vegetation which they pick up on the range.—Farmers' Review.

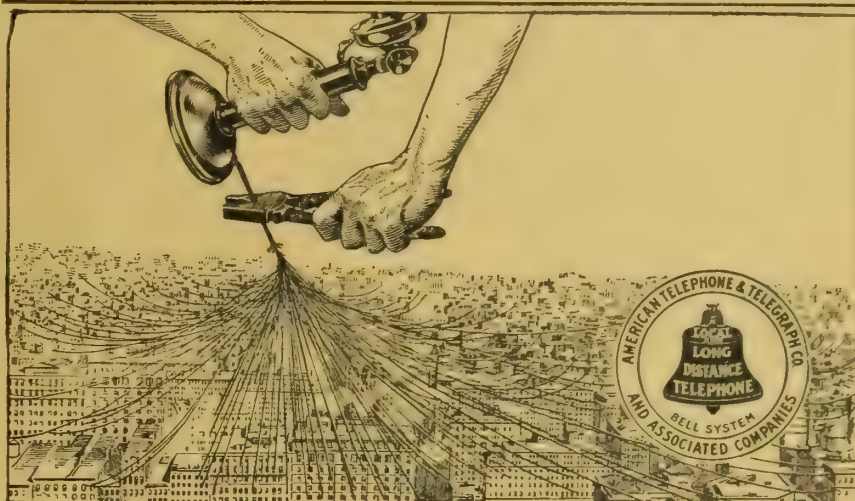
CALIFORNIA STATE POULTRY SHOW

California's big round-up show for the coming season will be held at Sacramento, January 14 to 18, 1916, under the auspices of the California State Poultry Association in conjunction with the Sacramento Poultry Association. This is the first annual show of the state association and

promises to be one of the biggest shows of the state.

The dates selected will bring this show at the end of the list of California shows, therefore the quality will be one of the highest, for all the champions of the other shows will meet there to try for a place in the ribbons. A ribbon won at this show will be of great value to the winner as it will prove his birds to be real top-notchers.

W. S. Russell and Chas. G. Hinds have already been selected to judge. Other judges will be announced later. For membership in the association, premium list of the show, etc. write to C. A. Wilkins, Secretary, Box 1117, Sacramento.



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Suppose all telephones were silent, and that for forty-eight hours you could not even call a telephone exchange anywhere in the Bell System to ask what the trouble was!

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Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Water Right

A owns a piece of deeded land irrigated from springs located on government land and conveyed through a ditch which has been used constantly for this purpose for a period of 30 years. The water has never been filed on. B, a homesteader, has filed upon the land which supports these springs. He is now living on the land and intends to prove up on it. What are the respective rights of these two parties? What would you advise A to do in order to protect his right, if he has any?—Subscriber, Milo.

Under Section 9 of the act of congress of July 26, 1866, where an appropriation of waters arising upon government lands is made and ditches are constructed over those government lands before sale thereof into private ownership, the appropriator acquires a vested possessory title and no other or further record title is required to support his rights therein. The homesteader has no right to the spring arising upon his land, and it is unnecessary for A to do anything further to protect that right. This statute has been construed a number of times by the supreme court of this state, all the decisions being to the effect above given.

Right to Water

As has a ditch which conveys water from a stream. This ditch has been in use for over 30 years. However, the water, to the amount of 80 miners inches, was filed on by A in 1912. The stream from which above water is taken is a tributary of a river whose waters were filed on prior to filing first mentioned, but not before ditch was in use at least five years. What right has A to the water and in what way does the filing in 1912 affect the right?—Subscriber, Milo.

Actual appropriation of water to a beneficial use is sufficient, and it is a well settled law in this state that such actual appropriation without compliance with the code provisions of notice and recordation is enough to give such appropriator a right as against anyone who did not have at the time when he in fact made his diversion a superior right. Compliance with the sections of the code relative to appropriation is important only in so far as the claimant seeks to have his right relate back to the date of posting. Such compliance will cut off rights accruing between the date of posting and the actual diversion for beneficial purposes. Therefore in the above case A has a right superior to that of the second appropriator, the priority of his right running from the date of his actual appropriation of the 80 inches of water to a beneficial use which was, as stated, five years.

SOUTH SAN JOAQUIN FAIR

The San Joaquin irrigation district is planning to hold a fair at Manteca on October 8-9, which is to be known as the South San Joaquin Community Fair. It is to be given by the South San Joaquin Parent-Teachers' Association of Manteca, Ripon and Escalon in conjunction with the farm centers of these places. The fair arrangements are in charge of an executive committee headed by Mrs. Castle of Manteca. It is planned to have one day set aside for a farm stock show and agricultural display of the community's produce, the other day to be given over to domestic science work and work of the school children. The winner of the Ripon corn club will be selected at this time when all of the club members will make a display of their crops. One of the special features of the fair will be a colt and a calf show. The colts are to be shown by the farmers for prizes offered by the various stallion owners. The calf show is to be held by the boys of the community. The calf is to be of the dairy type and is to be raised under the most economical and practical dairy farm conditions.

The atmosphere governing the fair is to be community cooperation and interest, and it is hoped to bring the people of this section of the county to a realization of what their community can produce and what the schools are doing for their boys and girls.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Drilling a Well

I have a combination rotary and drop drilling machine, with just the common rotary and drop points. I wish to make a test for water and have gone down 27 feet but am unable to go farther on account of the hardness of the rock. Can you give me any suggestions of what to use and how, also cost?—Subscriber, Ramona.

The inquirer evidently has a small hydraulic well digging outfit but it will be necessary for us to have more particulars in order to answer the questions. If he has struck a boulder and not a stratum of rock he might be able to go down by moving a few feet to one side. I would advise testing this by at least making a few shallow holes, if a deep one cannot be made. If he has to go through solid rock he will need a standard rig and tools which will be very expensive.—J. B. N.

Pruning Blackberries

Please give full directions and proper time to prune Himalaya and Mammoth blackberries, also loganberries, the second summer after planting.—Subscriber, Escondido.

From a former issue of the Cultivator we quote reply to a similar query, by Mr. John Vallance of the Morse Seed Company: "Mammoth blackberries must be trellised, and when pruning the fruit-bearing wood of last year should be cut away entirely, thus depending upon the new growth for next season's crop. If these shoots are too close together they should be pruned out so as not to leave too much vine on the plant. The same rule applies to the pruning of dewberries, loganberries and the Himalaya blackberry." All canes which have borne fruit should be removed about the end of July or first of August. Fruit comes only from canes which are one year old. In "California Fruits," by Wickson, Mr. Claud D. Tribble gives the following regarding pruning of vines the second season after planting: "Give the plants some support the first season by a stake, and the second season the permanent stakes are put in, one on each side of the plant. In driving them allow the tops to be wider than the bottom so the berries can be picked easily. Large wires or wooden cleats are used to support the vines or canes. The posts are about six feet long and driven in the ground until solid, making the top about five feet high. During the first season's growth there is very little pruning except thinning to the desired number of canes. The second year the canes are allowed to grow above the stakes and then are tipped to cause laterals to form, which are cut back to less than 12 inches to produce berries the following season. The old wood is cut out each season and the new shoots trained as before. If the old canes are cut out as soon as the crop is gathered it is done more economically and the plants grow better."

Neighbor's Chickens

What is the state law in case neighbor allows chickens to run in walnut grove, and what can orchard owner do when owner of chickens refuses to keep them up when asked?—Subscriber, Santa Ana.

This is a question often asked and answered in the regular columns of this paper. In effect the state law provides that damages may be collected from the owner of the trespassing stock in case the property owner has surrounded his orchard or garden with a substantial fence. Then he may collect such damages as he can show. There is another law, however, known as the estray law, by which all live

stock not under the control of its owner may be impounded and kept until called for by the owner when he must pay certain costs for keeping the stock. In case of an orchard the damage which could be proved would be very slight.

Rhubarb Culture

I planted seed of Wagner's Giant rhubarb this spring. The stalks are quite large but I do not know whether they should be cut the first season. Kindly inform me regarding this, also what causes the stalks to die at the root when they have plenty of moisture?—Subscriber, Modesto.

Mr. J. B. Wagner replies: It would be all right for your inquirer to subdivide his rhubarb plants from seed planted last spring, but do not do so in the hot weather. The leaves or stalks of any and all plants die after maturity whether the plant has plenty of moisture or not.

Seed may be planted from November to May. If it is not a frostless section, the earlier planted the better. Plants may be set out from March to August. Last year we planted some in August and by the following May we had harvested over 25 tons per acre from them. Young plants set out now, will, with the proper care, yield a heavy crop next spring. Unlike the old style rhubarb, which takes one to two years to make a crop, the Wagner Giant strains give better results in six months than the common varieties do in 12 to 18 months. It should be planted on well drained soil and in as near a frostless section as possible. Plant one and one-half by four and one-half feet, making a dense row which shades the ground. In this way less water is needed. If frost occurs where they are planted thickly there will be little or no damage as the leaves will protect the stems.

Drying Figs

Please print directions for drying a small amount of figs, say 25 pounds—Subscriber.

In the issue of the Cultivator of July 16, 1914, Mr. George C. Roeding gives the following directions for drying figs in large or small quantities.

Unlike many other fruits, the fig in order to produce a high grade article must be allowed to remain on the tree until it loses its original form, shrivels up and drops off. Sometimes it is necessary to jar the trees slightly if the shriveled figs do not drop, or knock them off with light bamboo poles. From the orchard they are hauled to the drying ground which should either be a hard piece of ground or an alfalfa field.

The figs are dumped on trays which are stacked at once, for, as a general rule all figs—with the exception of the very large ones—are dried sufficiently so that when they come on to the drying ground no further exposure

to the sun is necessary. One of the universal complaints of California figs has been their tough skin. This is not due to any unfavorable climatic or soil condition, but is the result of over-drying. The sorting of the figs may be commenced two days after they have been placed on the trays. All the figs which have a slightly leathery feeling to the touch are thrown into a pile by themselves in the drying shed, and the bird-picked and split figs into the cull pile. These are not lost by any means, but sell readily at two and half to three cents per pound. The soft figs are packed on trays as before, the trays are stacked, and the figs remains on them until they reach the proper degree of dryness when they are thrown in with the others. It is advisable to leave the figs in the pile, which may be from three to six feet deep without the fruit being damaged in the least, for a period of two weeks, turning the figs over with a scoop shovel at least once during this period or oftener if time will permit.

Just prior to delivering to the packing house give the figs a thorough washing in a brine having not less than four ounces of salt dissolved in a gallon of water. A pruner dipper may be used to good advantage for this work. The figs should remain in this brine for a period of 10 to 15 minutes, depending on their condition. They are once more placed on trays, two or three inches deep, exposed to the sun for half a day to allow the water to drain off, and the trays are again stacked. Within two days they can be dumped into sweat boxes and are ready for delivery. This processing not only cleanses the figs, but it softens the skins, causing them to feel like a kid glove when squeezed between the fingers, and in addition to this the figs present a bright and most inviting aspect. They are a delight to the eye and appeal to the palate as no other fruit does.

Corn Ear Worm

What is the best method of preventing worms from destroying ears of corn?—Subscriber, San Dimas.

There seems to be no way of controlling this pest other than to plant a catch crop, which in the case of corn usually means somewhat larger planting than it is expected to harvest. No spray is effective for the reason that the egg is deposited beneath the husks of the corn.

Weevil

We are troubled with worms in our lima beans. What may be done for them?—Subscriber, San Dimas.

We presume by worms our subscriber refers to the common bean weevil. There is no satisfactory control of this pest in the growing crop. As soon as the beans are gathered they may be treated as recommended by Mr. Essig in "Injurious and Beneficial Insects of California": "While many remedies have been recommended for the control of bean and pea weevils, there is nothing that will compare with fumigation in an air-tight receptacle. Carbon bisulfid, at the rate of three pounds to each 1000 cubic feet of air space for a period of 48 hours, is recommended for small lots and hydrocyanic acid gas at the rate

of two ounces of cyanide to 100 cubic feet of air space, one hour for large quantities.

Relevelling Alfalfa

We have alfalfa planted a year ago this spring which was not properly levelled and did not grow well in spots. Expect before next spring's planting time to replant. Will there be any injury from the roots of the old crop?—Subscriber, Galt.

Do not think there will be any injury whatever other than that the roots will make the levelling somewhat more difficult, but any which are left in the ground will only add to the stand when the reseedling is done. In fact the only way of renewing is to thoroughly disk the ground and split up the old roots.

Tree Injured by Rabbits

What can I put on trees which have been injured by rabbits; that is, can I paint them so that the wound will heal over more quickly, or is white-wash better?—Subscriber, Galt.

Grafting wax is good. Also we have seen trees which were gophered for more than a foot above ground treated in the following way: When found before they had dried off at all a pile of mud was placed against the trunk and heavy irrigation given to keep this coating wet, with the result that the whole surface granulated and new bark formed. It must be borne in mind, however, that to do this a tree must be taken almost immediately after the injury. If the tree has been completely girdled and the wound allowed to dry, then the only way of saving the tree is to use the bridge graft, which consists of putting scions taken from good, healthy trees underneath the bark, both above and below the wound. These will maintain the flow of sap until the new bark can be formed over the new wound. This requires most careful handling. The method of doing the work was illustrated in the Cultivator of July 23, 1914.


THE INTERPRETER

James Ross and his daughter Janet, from Canada, visited relatives in Chicago recently, remarks Everybody's Magazine in beginning this story. Day after day Janet and her father went sightseeing, always together.

Janet's aunt, noticing this, one day suggested that she let her father go downtown alone occasionally, and added, jokingly, "Men do not like to have women always tagging along."

"Ay, ahntie, but he wahnts me," explained Janet, earnestly. "He canna thole to stir oot o' the hoose his lane. Ye wadna believe hoo fasht he is onywhere wi'out me. Ye see, faither taa'ks sic braid Scoatch that stranger folk dinna ken what it's a' about, an' I hae tae gang wi' him tae dae the converssin."

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Jelly Making

Timely Information for
the Preserving Season

Many women have all kinds of trouble when it comes to making a good jelly. If the following simple instructions are carefully followed, the results will prove most satisfactory:

Strain juice through a full flannel bag. Do not squeeze the bag at first. When the juice has dripped over night, the bag may be squeezed, but this juice should be kept separate. The jelly made from it will not be clear, but can be used for jellycake, etc. Weigh juice and add three-quarters as much sugar and corn syrup as fruit juice. The sugar should be heated and added slowly to the boiling juice; then add the corn syrup. Jelly may be tested by dropping a little on a cold plate. It is sufficiently cooked if it thickens slightly.

The ideal corn syrup for use in jelly making is the brand known as Karo (Crystal White). When properly blended with the sugar it will assure the heavy syrup so much desired, while avoiding the cloying sweetness which results when sugar alone is used.

Try Karo (Crystal White) syrup this preserving season, and ask your grocer for the little Karo Preserving Booklet, which gives detailed instructions regarding jelly making and preserving.

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"ARE YOU ONE OF MY GANG?"

Are you one of my gang?
Yes you're one of my gang.
The same job is yours and mine,
To fix up the earth,
And so forth and so forth,
And make its dull emptiness shine.
The world is unfinished; let's mold it a bit
With pickaxe and shovel and spade;
We are gentlemen delvers, the gentry of brawn,
And to make the world over our trade.
And I love the sweet sound of our pick-axes' clang,
I'm glad to be with you. You're one of my gang.

Are you one of my crew?
Yes, you're one of my crew,
And we steer by the same pilot star,
On a trip that is long
And through storms that are strong;
But we sail for a port that is far.
O, the oceans are wide—and we're glad they are wide,
And we know not the thitherward shore,—
But we never have sailed from the Less to the Less
But forever from More to the More.
And we deem that our dreams of far islands are true.
Let us spread every sail. You are one of my crew.

You belong to my club?
Yes, you're one of my club,
And this is our program and plan:
To each do his part
To look into the heart
And get at the good that's in man.
Detectives of virtue and spies of the good
And sleuth-hounds of righteousness we.
Look out there, my brother! we're hot on your trail,
We'll find out how good you can be.
We would drive from our hearts the snake, tiger, and cub;
We're the Lodge of the Lovers. You're one of my club.

Do you go to my school?
Yes, you go to my school,
And we've learned the big lesson,—
Be strong!
And to front the loud noise
With a spirit of poise
And drown down the noise with a song.
We have spelled the first line in the primer of Fate;
We have spelled it, and dare not to shirk—
For its first and its greatest commandment to men
Is, "Work, and rejoice in your work."
Who is learned in this primer will not be a fool—
You are one of my classmates. You go to my school.

You belong to my church?
Yes, you go to my church,—
Our names on the same old church roll—
The tide-waves of God
We believe are abroad
And flow into the creeks of each soul.

And the vessel we sail in is strong as the sea
That buffets and blows it about;
For the sea is God's sea as the ship is God's ship,
So we know not the meaning of doubt,
And we know, however the vessel may lurch,
We've a Pilot to trust in. You go to my church.
—Sam Walter Foss, Author of "Songs of the Average Man," in "Unity."

HOW A FARM WOMAN FOUND HERSELF

By Mrs. Emily Hoppin, Before the
State Fruit Growers' Convention
at Stanford University,
Palo Alto

NE of the most pleasing speakers at the recent state fruit growers' convention at Stanford University, Palo Alto, was Mrs. Emily Hoppin. She made addresses before the women's sessions of the convention; also in the general convention meetings at which all gathered. The following address was made on Friday evening before the entire convention. The next day Mrs. Hoppin was taken ill, and though she succeeded in reaching her home, from it she was taken to the hospital at Woodland and on August 4, died.

Mrs. Hoppin was president of the California Federation of Women's Clubs and one of the most prominent women of the state. She has lived many years in Yolo County and has been an inspiration to women who have found themselves confronted with the problem of homemaker and breadwinner combined. Her own place has been most successfully managed. Her loss will be greatly felt in her home community and in the state.—Ed.

The next fall found John and Mary on a ranch in California, a long low building in the middle of 1500 acres; a beautiful ranch with stately oaks and waving grain.

There was a big kitchen. Mary had read of the beautiful farm kitchens with their spotless floors, the sunlight lying in bars across them, the tins shining on their shelves, all very peaceful and attractive; but the writers forgot to mention the steps. Ten steps from table to pantry in Mary's big kitchen, 15 from stove to sink, just as many and one step down from sink to dining room; a screen door to open, two steps down and 20 from sink to pump, for no one had running water then. Fortunately, Mary did not have to take them all. One stout Chinaman always, and two in the summer, but they as a rule were more of a trial than the work, for the Chinese who found their way to the ranches were coarse cooks and not too neat.

There were the men, from 12 to 20, filing by the windows three times a day; there was the stranger within the gates, and the lame, halt and blind who came to stay not only days, but weeks and even months.

The years passed. Mary canned fruit, cared for chickens, skimmed cream and churned butter, bathed and dressed and cared for physically, mentally and spiritually, four little chil-

Good Pie Crust

A Simple Art Which Few
Women Master Thoroughly

In this country of pie eaters every woman should number among her other qualifications the art of making a good pie. It is surprising how few otherwise good cooks can make a perfect pie crust. The following recipe for a plain pie crust is especially valuable, because it was selected by the publishers of a famous cook book, out of hundreds of recipes that were submitted by eminent cooks in all parts of the country.

1½ cups flour, ¼ cup cornstarch, ½ teaspoon baking powder, ½ teaspoon salt, ½ cup lard, ¼ cup ice water. Sift the ingredients together. Cut in the lard till of the consistency of meal. Cut in the water quickly. Handle as little as possible—else it will be tough.

Even though you are rated a good pie maker, we would urge your trying this recipe. But just one word of caution—use good cornstarch. The one who originated this recipe—like thousands of other cooks all over the world—always depended upon the famous Kingsford's brand.

Insist upon Kingsford's—which costs no more than inferior kinds—and ask your grocer for the little Corn Products Cook Book, which contains the above recipe—also a recipe for a richer crust if desired.

Goodbye Ants

No Longer Can You Drive the
Good Housewife to Distraction

The pesky little ant—the bane of many a housekeeper's existence—has met his Waterloo at last. No longer can he overrun the pantry and infest the sugar, jam and other foods—to the disgust and mortification of the woman of the house.

The ant is hard to kill, and countless remedies were tried upon him without result. It was a sorry day for the ant family, however, when they started to overrun the candy shop and bakery of an ingenious resident of Los Angeles.

Driven to desperation by the annoyance, this man, after much experimenting, devised a paste whose effect upon ants borders upon the supernatural. Suffice to say, it hid his entire shop of the pest in one day.

This wonderful remedy is now put up for general use under the name of Kellogg's Ant Paste and can be obtained at all modern druggists or grocers. Insist upon Kellogg's, and your ant troubles will be a thing of the past.

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dren who by this time had come to her and John, superintended in the fall the preparing of the by-products of the 30 or more porkers that had been sacrificed for the ranch use, but every spare moment she spent with her books. Those spare moments were the bright ones of the day and the quiet twilight ones when the children were in bed and she could watch the wonderful skies and the blue hills.

It had never occurred to Mary that she did not have to do so much. John had put a check book in her hand, had her leave her signature at the bank, and told her to help herself, but that fact did not make much impression. They lived the pastoral life of the patriarchs of old, and aside from the occasional trip or the buying for the home Mary, in her isolated life, had about as much use for a check book as Sarah or Rebecca would have had if Abraham and Isaac had handed them one.

Sometimes Mary visited her neighbors and came home more contented for some of them had the crowd of men and no Chinaman; they had all these other things to do just as Mary had; they had no fruit to use, much less to give away, and no check book they knew they could use, only their persuasive powers to coax a few dollars out of their Johns.

Mary began to feel that John was growing away from her, for aside from the home topics he had little to say. He would come into the house, read the daily papers and the magazines, bury himself in a book, and in the winter the "Congressional Record" had to be read word for word during the sessions of congress, and John loved dearly to talk it over, but never with Mary.

Finally Mary gave herself some sober thoughts, and shaking herself figuratively, said to herself: "Here you are, living in a circle. By the time you are forty you'll not know enough to talk even to the chickens. Wake up! get out of your rut and know what is going on. You can have intellectual reading and communion with saints, but everyone ought to be alive to the things around him."

She began by acquainting herself with the proceedings of congress, as John was so interested in them. Those were the days of Blaine and Conkling and men of equal ability. Their speeches were well worth reading, and when John found she was reading them he seemed to enjoy talking them over with her; then she found that he loved poetry as well as she did. Congressional proceedings and poetry seemed a queer combination, but Mary remembered the advice Charles Eliot Norton of Harvard once gave:

"Whatever your occupation may be, or however crowded your hours with affairs, do not fail to secure a few minutes each day for refreshment of your inner life with poetry. It performs a three-fold duty of revelation, history and memory."

Then Mary discovered a new side to herself and John, and it was that he liked best her having her own opinions. She had supposed that most men who had such an air of finality in their own views wanted women to be a species of parrot to echo their words.

"There is no reason," John said, "why women should not have a voice about everything."

"Voting, too," said Mary.

"Certainly, why not," replied John. "I would if I were you, Mary, stand for everything that meant growth for women."

Another thing Mary discovered was that John liked it better when she announced a decision instead of asking him for one.

John gave the land, and the county graded and gravelled a good road which gave more opportunity for visiting; the windmill, and later the gas engine, made it possible to pipe the water to the kitchen and bath; the milk separator was the first one in the county, for John loved new inventions, and how it simplified the butter problem! Mary saw that conveniences were in the kitchen, and John was so interested in buying new things every agent found in him his heart's desire.

Then the joy of being a neighbor to the whole world; of occasionally forgetting the chickens and butter and fruit and living with people who thought great thoughts and did great things.

It was Ibsen who opened the door to Mary and showed her how women have accepted through all the centuries things as they were, and not as they might be, for all women have to do is to go through the door and take possession.

I think of those early Californians, their high ideals of women and their chivalry to them; their upright dealing; the generosity of many of them which with some was not almost but quite a fault; and I rejoice that their mantle had fallen on our California men of today who have given us a full measure of justice and kindness. The Eastern man has it yet to learn to give, but the time is coming when men and women will rule together. There is coming, also, a civilization that will sound the death knell of war about which nothing good can be said and everything evil.

When Mary found herself she found all women, for all women have a common weal and a common woe, and she found the manhood of the men of the farm, for it is they who have given us our privileges and the state its best laws.

Do you remember the year when you voted as to whether we should have the right of suffrage? On the morning after election we looked at each other and said, "We have lost." Then came the message from Siskiyou and Modoc, from Inyo and Humboldt, from San Diego and Placer, and the message was "Yes." Never think we shall forget, nor forget how you have helped us Marys of the farm to find ourselves. Stand by us still as we try to bring still better conditions to the farm women and to all women. Use your influence to have school libraries in every county in the state. Help us to find the best way to deal with the wayward boy and girl; help us to make the immigrant a blessing, not a curse; help us to have the true civic spirit encouraged of tidy, convenient homes, of well kept cities, of the banishment of vice in all its forms.

We of the farm hold the balance of power in this state, and if we will we can say to the people of the cities, "You shall." We of the country have high ideals, for we "are out in the fields with God."

"With windows to open and let in the sun;
And radiate light when the day is done,
And the breeze of the world blowing through."

Dissolve a tablespoon of painter's size in a pint of warm water, and with this wash white paint, using a chamois leather. It takes off the dirt easily, and leaves the paint highly polished.



Kitchen Economy

With wood or coal—waste heat. Too much or too little for best cooking. In hot weather too much heat coming out into the room.

With a good oil-stove—no waste heat or fuel. One burner or four—low flame or high—a slow fire or a hot one. All the convenience of gas for every home, all the year round.

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Los Angeles Market

LOS ANGELES, August 11, 1915.

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Arizona Longhorn17½
California Fresh14
Cheddar20@21
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Eastern Daisy19
Oregon Triplets15½@16
Eastern Twins17½
Longhorn17½@18
Imported Swiss33@35
Tillamook16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts28
Candled30@32
Petaluma—Santa Rosa30
Northern Case Counts25
Northern Fresh Extras32
Other Outside Stock27

Prices to producers:
Hens, lb.10@17
Roosters, old9
Broilers, lb.17
Fryers16
Roasters, lb.16
Turkeys14@16
Ducks12
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7.75
Prime Steers7½@7½
Helfers6½@6½
Calves, lb.8½@9
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head4.75@5.00

POTATOES

Wholesale selling prices:
Idaho Russet2.40
Idaho Rurals1.60
Sweets, yellow, lb.3
Northern Burbanks1.30@1.35

ONIONS

Wholesale selling price:
Bermudas, Imperial Val., cr.75
Boiling Onions, crate1.35
Crystal Wax, crate90@95
Red, cwt.1.00
Local Silverskins, lug50
White Globe, lug50
Garlic10

VEGETABLES

Wholesale selling price:
Asparagus, green, lb.10
Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax4@4½
Limas3½@4
Green3@4
Cabbage, sack65
Carrots, doz.30
Cauliflower, doz.1.50
Celery, doz.40@65
Chicory40
Chives, doz.1.25
Corn, lug40
Cucumbers, lug30@35
Egg Plant, lb.3@4
Escarole, doz.40
Horseradish, lb.10
Leeks, doz.10
Lettuce, doz.25
Mint, doz.40
Okra, lb.6@7
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.40
Parsley, doz.15
Peas, Telephone4½@5
Peppers—
Chili, Green5@5½
Bells4@6
Rhubarb—
Crimson Winter, box75
Strawberry90@1.00
Spinach, doz.15
Squash—
Crookneck, box40
Summer, lug30@35
Tomatoes—
Crate35@40
Lug25@40
Turnips30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders1.25
Bellflower1.35
White Astrachan, box1.50
Gravensteins1.10@1.50
Crabapples, lug90@1.00
Apricots, lug50@60
Avocados, doz.4.50
Bananas, lb.4@4½
Berries—
Strawberries, tray75@1.00
Blackberries, tray75
Raspberries, tray80
Cantaloupes—
Large crates1.25@1.75
Casabas, half crate1.50

Cherimoyas, lb.20@25
Figs—
Black50@1.00
Grapes, lb.5@6
Black, lug1.25
Malagas, crate1.25@1.35
Muscats, crate1.25@1.35
Concord, crate1.65
Thompson Seedless, crate80
Tokay, lug2.00
Nectarines, lug1.50
Peaches—
Clings, box30@50
Freestones, box30@50
Elbertas, lb.1½
Pears, Bartlett, box1.50
Plums—
Climax, lug90
Damson65@75
Satsuma, lug50@60
Burbank, lug40@50
Wickson75@90
Tragedy, lug90@1.00
Pineapples, lb.4½@5½
Quinces75@80
Sugar Prunes, lug75
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons1.25
Juice Lemons1.25
Grapefruit, Seedless3.00@3.25
Limes, basket75
Valencias2.75
Sunkist3.75

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes 7½@8½
Apricots8@16
Nectarines12½
Peaches5@7
Pears, lb.11@12½
Prunes8@12½

NUTS

Prices named by California Walnut Growers' Association are:
No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Peanuts—
California, Raw6
Japan5½
Eastern7½
Rice Corn5.00@5.25

HONEY

Wholesale selling price:
Comb, Fancy, Water White16
White15
Extracted Water White6½@7
White5½@6½
Light Amber4@5
Beeswax25

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Producer's price not far from one dollar under these quotations:
Limas5.00
Bayous6.00@7.00
Lady Washington5.25
Pinks4.35
Black Eyes6.75@7.00
Lentils14.00
Small White5.25
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley, Hay10.00@12.00
Wheat Hay10.00@12.00
Tame Oat10.00@13.00
Alfalfa10.00@11.50
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.25
Corn, White2.35
Wheat2.10@2.15
Oats, White1.90
Oats, Hulled2.25
Egyptian Corn2.20
Barley Seed1.55
Barley, Hulled1.90
Kaffir1.95
Milo1.85

Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Bran, Heavy1.90
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.2.30
Cracked Wheat, cwt.2.25
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Bone, Green1.65@1.75
Charcoal1.90
Oil Cake Meal2.60
Fish Meal3.15@3.25
Rolled Barley1.50
Middlings2.20
Feed Meal2.35
Scratch Feed2.10@2.40
Oyster Shell1.15@1.25

San Francisco Market

SAN FRANCISCO, Aug. 10, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Extras27
Prime Firsts25½
Firsts24½

CHEESE

Wholesaler to retailer.
Oregon, Y. Am.14½
Young America11½@14
California Flats8@13
Cheddar20
Oregon Twins13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Extras30½
Select-Pullets24½

Price to producer:
Hens, lb.13@16
Fryers22@24
Broilers23@25
Roosters—
Young23@24
Old10@12
Squabs2.25@2.75
Ducks12@15
Steers4@6½
Belgian Hares, lb.6@7

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Helfers3@5½
Calves, lb., live wt.6@9
Hogs6½@7½
Wethers6@6½
Ewes5½@5¾
Milk Lambs, lb.7½@7¾
Shorn stock, ¾@1c less

POTATOES

Wholesale selling price:
Burbanks, cwt.75@1.25
Oregon2.00@2.25
Delta75@1.00
Sweets, lb.5@7

ONIONS

Wholesale selling price:
Onions, cwt.50@75
Bermudas1.00@1.15
Australian Browns75@1.00
White, crate65@85
Wax, crate1.00@1.10
Oregon, cwt.90@1.00
Garlic, new4½@6

VEGETABLES

Wholesale selling price:
Beans—
String, lb.2@3½
Limas, lb.3@4
Wax, lb.1@2
Corn, sack50@1.25
Cucumbers35@50
Eggplant, lug25@50
Lettuce, crate50@1.00
Okra, lug35@50

WEATHER CONDITIONS

For Week Ending August 7, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Temperature Data

Stations	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Eureka	.00	.26	.19	64	50
Red Bluff	.00	.00	.00	102	60
Sacramento	.00	.00	.00	96	56
San Francisco	.00	.01	.01	68	50
San Jose	.00	.00	.00	86	46
Fresno	.00	.00	.00	104	60
Independence	.00	.04	.00	94	58
San Luis Obispo	.00	.01	.03	88	48
Los Angeles	.00	.00	.00	84	60
San Diego	.00	.00	.00	76	62

Peas, sack1.25@2.00
Peppers—
Bell, box25@50
Chili, Mexican, lug25@40
Rhubarb75@1.00
Squash—
Summer, lug35@65
Tomatoes—
Delta, lug30@50
Bay50@75

FRESH FRUIT

Wholesale selling price:
Apples—
Alexander50@85
Gravenstein70@1.10
Bananas, Hawaiian, bunch1.25@2.00
Blackberries, chest1.50@2.50
Cantaloupes—
Turlock Ponies65@75
Southern, crate75@1.00
Turlock Standard90@1.25
Delta, lug50@75
Casabas, lb.1½@2
Figs, box, single layer, black75@85
White, Single layer85

Grapes—
Fontainebleau, crate30@50
Thompson Seedless, crate50@75
Malagas, crate50@75
Huckleberries, lb.10@12½
Loganberries—
Red, chest5.00@7.00
Black, chest1.00@1.50
Nectarines, crate1.00@1.25
Peaches—
Wrapped, box20@40
Lug40@50
Strawberry, lug50@65
Pears, Bartlett, box1.00@1.50
Other Varieties75@1.25
Canners', ton20.00@30.00
Pineapples, doz.1.00@1.75
Plums, crate50@75
Raspberries, chest8.00@10.00
Strawberries, chest1.50@3.50
Watermelons, doz.1.50@3.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50@3.50
Lemons1.50@3.50
Lemonettes1.25@1.75
Limes, Mexican, case4.00@5.00
Tangerines, halves75@1.75
Valencias2.75@3.25

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, ¾c. All outside sections ¾c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Fancy
Apricots5¾c 6¾c 7¾c 7¾c
Peaches3¾c 3¾c 4c 4½c
Pears7c 8c 9c 10c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7c; 12-oz., 6c; 50-lb. cs., 6½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatsels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:
Nonpareil16½
I. K. L.14
Ne Plus13
Drakes11½
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6
Italian Chestnuts6½@7

BEANS

Wholesale selling price:
Limas4.50@4.55
Pink3.40@3.60
Black Eyes5.00@5.25
Cranberry4.00@4.25
Small White4.30@4.40
Garbanzos6.50@6.75
Large White4.40@4.55
Bayou4.25@4.50
Manchurian Speckled Bayous3.50@3.75
Manchurian Butters4.50@4.75
Red Mexican5.40@5.50
Red Kidney5.90@6.00
Horse Beans2.75@3.00

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new10
Extracted White6½@7½
Light Amber3½@4½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley8@10
Sonoma-Mendocino11½@13
Oregon Clusters11½@13

HAY

Under date of August 7, 1915, Scott, Magner & Miller say:
Receipts of hay for the past week were 4740 tons, about the same as last week. Although these receipts are

somewhat heavy they have moved off well. Market conditions seem to show a little improvement. Export trade the past few months has taken vast quantities of hay and this, with the acknowledged shortage of the crop in most sections, gives the market a buoyancy which it has not experienced for some time past. Several round lots have been purchased throughout the interior districts during the week at advanced prices. Arrivals of alfalfa are very small. As a rule the Sacramento River piles alfalfa in during this season but to date the receipts have been moderate and this commodity is selling well at advanced prices. Practically no hay from the interior alfalfa districts is arriving at the present time. Large offerings of straw are being made but trade is very limited, most people preferring the cheaper grades of hay for this purpose.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (14 bales).....	13.50@14.50
No. 1 Wheat or Wheat and Oat.....	11.50@12.50
No. 2 Wheat or Wheat and Oat.....	8.50@10.00
Choice Tame Oat.....	11.00@11.50
Other Tame Oat.....	8.00@10.00
Barley.....	8.00@10.00
Wild Oat.....	6.00@9.00
Alfalfa.....	8.00@11.00
Stock Hay.....	5.00@5.50
No. 1 Barley Straw.....	25@40

GRAIN

Alfalfa Seed.....	16 1/2
Wheat, Cal. Club.....	1.75@1.77 1/2
Barley Feed.....	1.25@1.27 1/2
Barley, Old Crop Feed.....	1.02 1/2@1.05
Corn, Eastern Yellow.....	1.80@1.82
Corn, Egyptian White.....	1.85@1.90
Oats, Red, Feed.....	1.25@1.32 1/2
Oats, White, Feed.....	1.47 1/2@1.50
Millet.....	2 1/2@3 1/2
Flaxseed.....	5@5 1/2
Rye.....	2.00@2.25
Sunflower.....	5@5 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots.....	15.00@16.00
Bran, ton.....	27.50@29.00
Feed Cornmeal.....	41.00@42.00
Cracked Corn.....	41.00@42.00
Roller Barley, ton.....	26.00@27.50
Roller Oats, ton.....	37.00@37.50
Middlings.....	32.00@35.00
Shorts.....	28.50@29.50
Ollcake Meal.....	36.00@37.50
Cocoanut Ollcake Meal.....	22.00@23.00

Citrus Fruit Market

Los Angeles, August 11, 1915.

The better prices prevailing for Valencias last week are still maintained, in some cases they are even slightly higher. Shipments are very light; a few packing houses have suspended operations for a short time and will hold fruit for expected better prices in September and October.

The lemon market is practically unchanged. Some sales are reported 25 cents higher than the last few weeks.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 30,628 cars; lemons, 5,640; total, 36,268. To same date last season, oranges, 35,570; lemons, 2,534; total, 38,104. From Tulare County this season, oranges, 5649; lemons, 202; total, 5851. Last season to same date, oranges, 5875; lemons, 30; total, 5905. From northern counties, oranges, 630; lemons, 2. To same date last season, oranges, 404; lemons, 5.

NEW YORK, Aug. 9.—Ten cars Valencias, one mixed car and four cars lemons sold. Oranges strong, generally slightly higher. Lemons also slightly higher. Fair.

Valencias—	
Old Mission, ex. fy., Chapman.....	\$5.45
Old Mission, fy., Chapman.....	4.95
Golden Eagle, Chapman.....	4.65
Defiance, E. H. Scott.....	4.75
Condor.....	4.40
Orchard, M. C. Ex.....	4.55
Standard, National O. Co.....	4.15
Duquesne, A. C. G. Ex.....	5.20
Fort Pitt, A. C. G. Ex.....	4.20
Old Mill, A. C. G. Ex.....	3.95
Carmencita, S. T. Ex.....	5.05
Colombo, S. T. Ex.....	4.55
Las Palmas, S. T. Ex.....	4.25
Geo. Washington, Or. Ex.....	4.85
Glendora Hgts., Foothill A. C. G.....	4.75
Evolution, A. C. G. Ex.....	4.15
Glendora Hgts., Foothill A. C. G.....	4.50
Evolution, A. C. G. Ex.....	4.15
Red C. Covina Ex.....	4.40
Cougar, Covina Ex.....	4.40
White C. Covina Ex.....	3.90
Alphabetical, Or. Ex.....	4.30
Ticktock, Or. Ex.....	4.05
Banana Belt, Or. Ex.....	4.10
Tesora, Anchored.....	3.90
Ruby, C. C. U.....	3.75
Ruby Green, C. C. U.....	3.80
NAVELS—	
Orchard Run.....	\$3.15
Valencias—HALVES—	
Fort Pitt, A. C. G. Ex.....	\$1.90
Red C.....	1.70
GRAPEFRUIT—	
Boxes.....	\$2.50
LEMONS—	
Pet.....	\$2.60
Greyhound.....	2.10
Trail.....	2.50
Linnet.....	2.30
Swallow.....	2.05
Upland Queen.....	1.35

BOSTON, Aug. 9.—Seven cars sold. Market higher on oranges and lemons.

Valencias—	
Quality, S. T. Ex.....	\$4.15
Campfire, S. T. Ex.....	3.85
Cut and Fry, S. T. Ex.....	3.90

Alhambra, S. T. Ex.....	4.05
Don Quixote, S. T. Ex.....	3.75
Carmencita, S. T. Ex.....	4.85
Colombo, S. T. Ex.....	4.35
Las Palmas, S. T. Ex.....	3.60
Glendora Home, A. C. G. Ex.....	4.15
Monopole, A. C. G. Ex.....	3.35
Plymouth, S. T. Ex.....	4.35

LEMONS—	
Gold, Or. Ex.....	\$2.55
Comet, Or. Ex.....	2.35
Ambassador, Q. Ex.....	2.65
Consul, Q. Ex.....	2.55
Envoy, Q. Ex.....	2.65

ST. LOUIS, Aug. 9.—Market steady on Valencias, easier on lemons. Three cars sold.

VALENCIAS—

Searchlight, Or. Ex.....	\$4.05
S. S., Or. Ex.....	4.10

LEMONS—	
Sunside, S. P. Ex.....	\$1.95
Pet, S. D. Ex.....	2.10
Arab, S. D. Ex.....	2.05
Greyhound, S. D. Ex.....	1.85
Pup, S. D. Ex.....	1.60

PHILADELPHIA, Aug. 9.—Market is strong and higher on Valencias; lower on lemons. Five cars sold.

VALENCIAS—

Atlas, Or. Ex.....	\$4.50
Hector, Or. Ex.....	4.30
Trojan, Or. Ex.....	4.15
Martha Washington, Or. Ex.....	4.35
Cowboy, Or. Ex.....	4.30

LEMONS—	
Queen Bee, Q. Ex.....	\$2.25
Royal.....	1.85
Punch, S. T. Ex.....	1.95
Club, S. T. Ex.....	1.70
Swallow, O. K. Ex.....	2.15
Blue Jay.....	2.00
Owl.....	1.75

PITTSBURGH, Aug. 9.—Five cars sold. Steady on oranges and lemons.

VALENCIAS—

Jupiter, Amer. Ft. Dis.....	\$3.85
Iris, D. M. Ex.....	4.70
Violet, D. M. Ex.....	4.50
Jasmine, D. M. Ex.....	4.25

LEMONS—	
Fountain, V. C. Ex.....	2.35
Questa, ex. ch.....	.90
Patio, S. T. Ex.....	2.30
Urchin, S. T. Ex.....	2.10

CLEVELAND, Aug. 9.—Six cars sold. Market strong and higher on Valencias, lower on lemons.

VALENCIAS—

Mars, Amer. Ft. Dis.....	\$4.46
Jupiter, Amer. Ft. Dis.....	4.08
Glendora Alps, A. C. G. Ex.....	4.85
Glendora Home, A. C. G. Ex.....	4.75

LEMONS—	
California, A. C. G. Ex.....	\$2.40
California, A. C. G. Ex.....	2.40
Luster, Or. Ex.....	2.50
Reflection.....	2.05
Pet, S. D. Ex.....	2.75

CINCINNATI, Aug. 9.—Four cars sold. Market very active on oranges, lower on lemons.

VALENCIAS—

Argo.....	\$3.90
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LEMONS—	
Bridal Veil, V. C. Ex.....	\$2.25
White Cross.....	1.55
Lemonade, Or. Ex.....	1.15
Hill Crest.....	1.45
Questa, Q. Ex.....	1.10

CHICAGO, Aug. 9.—California and Washington pears are arriving in large volume, but prices are firm. Fifty-pound boxes, California Bartlett's, 1.40@1.50; Washington, 1.35@1.65; Michigan sugar pears, bushel, 1.00. Lemons, boxes, California, 2.75@3.25; Messina, 1.25@1.35; Oranges, boxes, California Valencias, 4.25@4.75; Messinas, 75@2.00. Plums, California, cases, 4 baskets, Diamond 1.10@1.25; Wickson, 1.00@1.10; German, 1.00@1.10; Satsuma, Simoni and Yellow Egg Plums, 80@1.00. Grapes, Malaga, 80@1.25; seedless, 85@95 for 4-basket cases; 8-basket cases, Delawares, 1.50@1.75. Peaches, boxes, 20 pounds, California Elbertas, 60@75; Crawford, 50@60; cases, 6 baskets, Arkansas Albertas, 90@1.25; Yellow Freestones, 35@40. Cantaloupes, standard cases, California, 2.25@2.50; some fancy stock, 2.75@3.00; Utah, 2.00; Arizona, 2.00@2.25; pony crates, Northern California, soft to choice, 50@1.75.

VALUE OF TREES

(Continued from Page 152)

as able as any trees to carry through our long dry summers without water, none should hesitate to plant them freely in any and all situations where trees are desired.

The Land of Pergolas

In a land free from forbidding snow and ice, where one may with comfort stay in the garden nearly every day in the year, there should be an abundance of garden accessories, especially of such as will provide rest or carry an interesting vegetation. To the latter class belongs the pergola and nowhere should it be more common than in our land of almost perpetual sunshine. Still, their use or position should not be forced. Pergolas should be founded in utility. Do not place one so that it begins nowhere and ends similarly. Let it connect some house entrance with a garden entrance or division of a garden or lead to a summer house, pool, tennis court or even a dignified seat.

MOTORISTS SHOULD BE BETTER INFORMED ON LUBRICATION

"A consideration of the properties of cylinder oils and an analysis of the conditions under which they lubricate leads us to the belief that a large majority of the complaints about cylinder oils can be accounted for as due to ignorance regarding the principles governing their use." So says Lieutenant G. S. Bryan of the naval engineering experiment station, Annapolis, Maryland. Continuing his article in the Journal of the American Society of Naval Engineers for February, he states:

"The three essential requirements of a good motor cylinder oil are: It must lubricate the piston efficiently at the temperatures encountered in the cylinder; it must give a good seal to the piston and rings, keeping them tight and preventing leakage of the oil and condensed gasoline past them; it must burn without forming carbon deposits in the cylinder when an excess of the oil gets into the combustion space.

"We have seen that with the water boiling in the jackets the temperature of the inner surface of the cylinder walls will be about 267 degrees Fahrenheit. The temperature of the layer of oil that is in immediate contact with the cylinder walls, which is the part that regulates the friction, cannot be much higher than this. I do not know of any motor oils that have a flash point lower than 325 degrees Fahrenheit. If the temperature of the cylinder walls gets up as high as this in a water-cooled motor there is something radically wrong, and the remedy is not to get another oil of higher flash point but to locate the trouble and remove it.

"It is an old theory that was never founded on solid facts that a high flash point is a necessity in a motor oil or the oil will burn up without giving any lubrication. The point was overlooked that when we have a maximum temperature of the gases in the cylinder of 2,700 degrees Fahrenheit and an average temperature of 950 degrees Fahrenheit, an oil with a flash point of 450 degrees Fahrenheit will offer but little more resistance to burning than would one of 350 degrees Fahrenheit.

"Either oil will burn if kept for any length of time in contact with the hot gas. Lubricating oil does not burn very easily or very fast, however, and the time given for it to burn in a motor cylinder is very short."

PHONES AND POWER FOR GLENN COUNTY FARMERS

The farm bureau of Glenn County the past two months has been collecting data in each farm center relating to the extension of needed electric transmission lines for power and the lighting of farm homes. Maps and other information have been prepared by the farmers showing individual needs throughout the county. Operating companies in the county have already expressed their desire to give the wants of the farmer most careful consideration. The bureau is also making special effort for more efficient telephone service throughout the rural districts. The farmer's business demands adequate telephone service and if such service cannot be obtained from existing companies a

number of farmers' cooperative lines will be established throughout the county.

So far as we can learn the first attempt at publishing an agricultural or farm paper was made in England in 1681. John Houghton started the "Collection of Letters For The Improvement of Husbandry and Trade." As the name implies Houghton had the right idea of a farm paper. He filled it with the practical experiences of his readers. That plan has always beaten the long essay type of paper. In that age, 200 years ago, America was supposed to be a wilderness, yet it is probable that Boston and New York knew more of each other than one rural county of England knew of the next one. Those were the days when, in order to stimulate the clothing trade, the English Parliament passed laws ordering the burial of the dead in woolen cloth.—Rural New Yorker

"SOME" TIRES

One of the most thorough tests ever put on automobile tires was the one that Goodyear Cord Tires have just come through triumphantly—as equipment of the fleet of armored Cadillacs which have reached the coast in charge of Col. R. P. Davidson, president of the Northwestern Military and Naval Academy, Lake Geneva, Wisconsin. The colonel has been training his boys in military motoring for several years. Two armored cars were in the 1910 Glidden Tour.

This year he undertook a military cruise from Chicago to the coast, the first that automobiles have ever made under military regulation. Road conditions could hardly have been worse. It was a continual battle with the elements. Literally plowing through the western roads with the cars covered with gumbo mud, the members of the expedition are thoroughly satisfied that one Wm. T. Sherman knew whereof he spoke when issuing his famous definition of war.

Upon their arrival at San Francisco almost all the front tires remained untouched, and the entire equipment on three cars still contained Chicago air. As exponents of the strenuous life Goodyear Cords have demonstrated they can withstand any test that actual warfare could exact, as the tour just completed was as arduous as any in which Uncle Sam's regulars have participated. It is expected this long tour will influence materially the war department's attitude concerning the military automobile other than truck type.

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Since farmers have become the chief purchasers of automobiles interest in better roads has increased wonderfully. But as every motorist knows, methods of road maintenance are sadly in need of organization.

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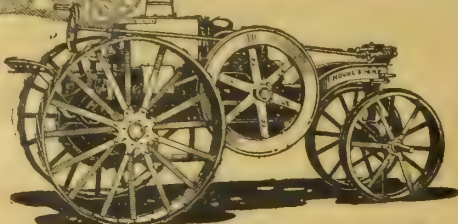
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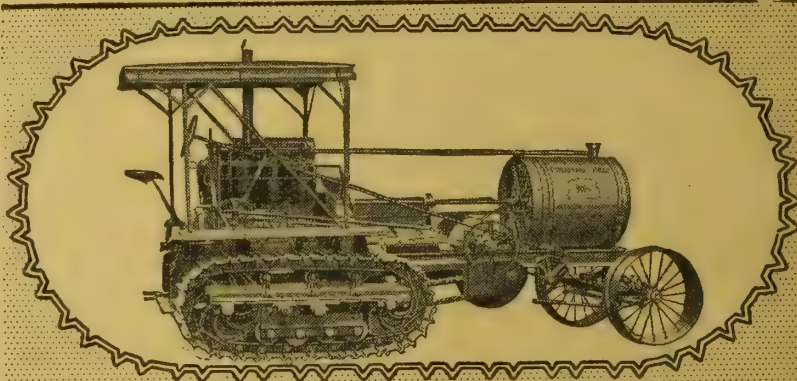
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Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

August 19, 1915

SAN FRANCISCO

Comfort at Catalina Even on August Days



IN THIS NUMBER

Prunes in Santa Clara Valley.
Coast and State Nurserymen's Conventions.
School of Fumigation at Pomona.

Gravenstein Apple Show, Sebastopol.
Silos in California.
New Ways of Cooking Vegetables.



Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

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Cement Worker's Handbook.....	.50	1.30	1
Citrus Fruits, by Coit (new).....	2.00	2.75	4
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Feeds and Feeding, by Henry.....	2.25	3.00	5
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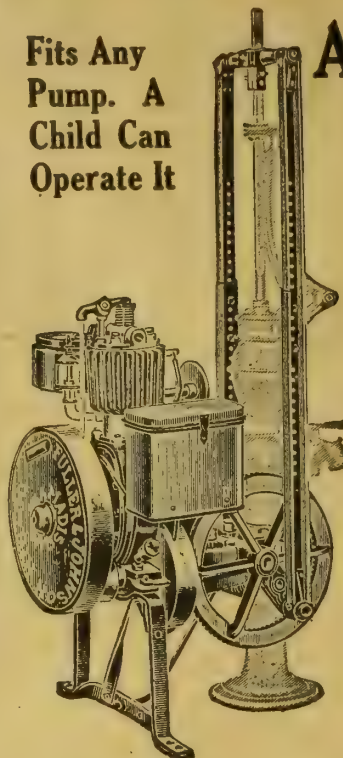
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Vol. XLV No. 8

LOS ANGELES: THURSDAY, AUGUST 19, 1915

One Dollar Yearly

Coast and State Nurserymen Associations

Two Associations Meet in San Francisco. The Coast Association Adjourns to Meet Another Year at Medford, Oregon.

NOTWITHSTANDING the quiet season there was a good attendance at the combined meetings of nurserymen held in San Francisco last week.

President Vallance of San Francisco presided over the sessions of the Coast Association and Mr. C. A. Tonneson, for many years secretary of the association, attended to the details of convention work. Probably the two principal lines of discussion were much the same as for the last few years, that is, a demand for more uniform horticultural legislation and an effort to secure more just transportation rates. With each city and each county having separate horticultural laws the life of the nurseryman is a burden and the trade is justified in demanding more uniform treatment and better opportunity to do business. He is willing to submit to supervision of a constituted authority, but does not wish that supervision to be assumed by as many as it now is.

The next place of meeting of the Coast association is Medford, Oregon, and officers elected for the ensuing

year are: President, S. A. Miller of Milton, Oregon; Vice-Presidents, C. F. Lansing, Salem, Oregon; A. J. Elmer, East San Jose, California; P. A. Dix, Roy, Utah; E. F. Stephens, Nampa, Idaho; D. G. Tighe, Billings, Montana; F. A. Wiggins, Toppenish, Washington; Joseph Brown, Vancouver, British Columbia. Secretary C. A. Tonneson of Tacoma, Washington, was re-elected. Standing committees will be appointed later.

From President Vallance's opening address we quote:

"The dream of my boyhood days across the water was that I might become a nurseryman, and in this great state of California that dream came true.

"For 30 years as a nurseryman I have lived with the flowers and plants that grow no where so profusely as on our beloved coast. As a young man I did not dream, Friends, that some day I would be chosen the president of one of the great nursery associations of the United States. That was an honor I could not anticipate, an honor that I have to thank you for, one that I

can assure you I deeply appreciate, and one that shall never be forgotten by me."

Mr. Vallance referred to the mortality of plant life which is out of proportion to what might be reasonably expected. Instead of 99 per cent of the trees and plants which are sold by nurserymen living, as they should, he stated that "neglect and careless handling, both before and after planting, reduce the vitality to such an extent that 70 per cent of the fruit trees sold succumb before reaching fruition age."

He stated that there are 40,000,000 fruit trees of fruiting age in California, more than one and a half million tons of fruit are marketed annually, requiring 75,000 cars of 12 tons each to handle. These cars will make a train 1,000 miles long. The president made an appeal for more uniform horticultural laws, for the raising of more seedlings on the Pacific Coast instead of importing so many, for the standardization of prices, for restriction on production of stock, for harmonious action between nurserymen and horti-

cultural commissioners. In closing the president referred to the Panama Pacific Exposition as follows:

"Today we who represent the life of the vegetable kingdom are meeting in the heart of a great city surrounded by huge buildings of steel and concrete, brick and mortar. Here the mineral kingdom has come into its own in this new San Francisco, the most modern city of the world. It is well for us to be here at the very gates of the greatest exposition ever conceived by the mind of man. We will find within its walls the beautiful, the wonderful and the marvelous from every country, every clime. Here, too, you will find the work of the nurseryman, the landscape gardener, the florist and the seedsman, kindred vocations, represented by the beautiful flowers, plants and trees without which this monument to man's genius would be incomplete."

The program as given in a former Cultivator was followed, and it is impossible to even refer to all the addresses and discussions. As the most

(Continued on Page 174)

Prune Culture in Santa Clara Valley

Leonard Coates Writes for Cultivator Readers of Cultural Conditions in the Greatest French Prune Growing Section in the World.

THE French prune crop reached its maximum in 1912 with 205,000,000 pounds. Previous to that the only crop nearly approaching this amount was in 1902 when 197,000,000 pounds was the total output. These figures appear, and are, rather gigantic, most of this crop being consumed in the United States, and much more might be were there a general and continual system of advertising. If this is brought about the scare produced by the alleged tremendous export shortage, owing to blockade of German ports, will be more of a blessing than otherwise.

There are two phases of the prune industry which are interesting at this time though very different in character. One is the summer treatment of young trees.

Summer Treatment

The second year after planting the French prune tree makes a very strong upright growth though with the wavy outlines peculiar to the type. There will generally be six or eight, or even more of these shoots, crowded together, the common practice being to thin out all but four or five the following winter. Some growers then shorten them to about one half, and some are content with the thinning out, doing no shortening-in.

A better way is to thin out to three

or four, never more, and let these be selected so that they start from the main stem as far removed from each other as possible. Then cut them back to about two feet of growth.

This thinning out should be done early in the summer, as it will throw more strength into what is to permanently remain, and allow air and sunlight to get to the center of the young tree. This is very important, for it enables the buds on the laterals, or future fruit spurs, to ripen and develop. These small laterals should be cared for from the start and cut back to three or four buds any time after they have finished their season's growth. The prune tree, like the apricot, should have its main branches clothed with fruit spurs which ought to be shortened back to three or four buds of every season's growth. Almost invariably these laterals are allowed to elongate indefinitely, receiving no attention until, in after years, the tree is considered too "brushy," and the pruner, with his two-handed shears, lops off all the "brush" he can reach. It is the main wood growth that should be sufficiently thinned out while the trees are young, and the laterals given plenty of sun and air and kept shortened-in to make them sturdy and fruitful.

Does it ever occur to prune growers that the whole plum family (domestica species) bears its fruit mainly on two-

year-old spurs? These spurs take several years to develop, however, depending upon climatic and other local conditions. How can one get a continuous supply of two-year-old spurs as the tree grows older without annual shortening of these spurs? The growth of the pendent laterals (which should be stocky, branched "spurs") becomes less and less as the tree matures, so that in after years while the whole tree, beautiful to look upon, a "blossom festival" in itself, covered with bloom, has indeed very little of the actual two year old spur bearing wood. This is heretical, I know, according to the ideas of many prune growers, and a non-observance or carrying out of this old theory of horticulture may be the reason why we do not at this time have a great holdover of prunes, a 200,000,000 instead of a 100,000,000 pound crop.

Curing

Curing will occupy the attention of prune growers for the next three or four weeks. The preparatory work consists in smoothing and pulverizing the surface of the ground by using the roller or clod masher after the spring rains are over. The quality of a prune pack is impaired if there are bruised fruits or those with broken skin.

It must be assumed that trays, if not new, have been thoroughly cleaned, an operation too often neg-

lected but which should be done in the fall before they are put away for the winter.

What is known as "June drop" of prunes is absolutely worthless as a food product, and the first apparently mature prunes that fall the early part of August should not be used. It is safer to have them raked up or gathered so that they will not be liable to be added to the crop by the pickers. They will be found to be dry and almost tasteless, though in appearance normal. Let the fruit drop naturally; do not shake the trees until the last picking when some prunes will hang on too persistently. Never use poles to knock the fruit off as this is very injurious to the tree.

French prunes, Sugar prunes and Standard prunes have a skin of similar texture, so that the same strength of the lye dip may be used for all of them. Robe de Sergeant can stand about the same strength, but it is better to have the lye a little weaker. The Imperial requires a very weak solution; boiling water will do, if it is really boiling. Use a standard brand of lye, one pound to 20 gallons of water, with the exceptions as just noted. It is better, much better, to rinse the prunes by a fresh water dip after two seconds' immersion in the lye solution, and also to change the lye solution frequently, as it soon becomes

(Continued on Page 177)



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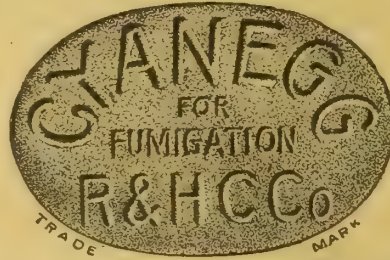
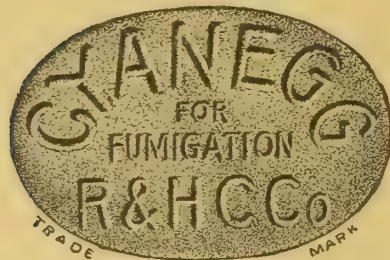
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Fruits

SCHOOL OF FUMIGATION



OR 28 years California has been using hydrocyanic gas to control insect pests on orange trees. Investigation of this method of control began about 1886. It was, however, some years before it was reduced to a practical working basis, but the menace of the white scale which almost destroyed the citrus orchards of California before the introduction of the vedalia forced the growers to investigate every possible method of control. The fumigation process cannot be said to be the work of any one investigator for many have had a hand in the efforts to bring it to a successful process, and strange as it may seem after more than a quarter of a century of use some methods now being perfected which are found to be the most satisfactory were among the first to be tried and discarded. To more fully investigate these methods and to secure information as to best practice Prof. C. W. Woodworth of the state university called for a meeting to be held at Pomona August 9. The wisdom of the choice of Pomona was demonstrated by the liberal attendance from the start. The first day's sessions proved the assembly room in the basement of the high school to be entirely too small and the larger room afterwards chosen was filled to overflowing.

In the evening when the fumigators went to the orchard of J. W. Mashmeyer to see practical work of fumigation under the old method of generating gas in vessels under the trees, also tests made with different fumigating machines, the procession of automobiles was nearly a mile in length.

Of course the attendants were not all from the district around Pomona, various sections from Santa Barbara to San Diego being represented.

At the first session Prof. Woodworth gave two lectures, one being historical and illustrated with lantern slides, the other giving account of cyanide injury, followed by laboratory experiments showing effect of cyanide and of acid on the fruit.

In opening his talk on the history of fumigation Prof. Woodworth stated that this was the first school of its kind ever held. He further stated that the sessions during each forenoon would be given over to discussion of some phase of insect life, and during the afternoon to the chemistry of fumigation, with addresses each evening in the assembly room, followed by field experiments and field discussions as to methods.

Historical Sketch

Credit for first discovery of the efficacy of hydrocyanic acid gas fumigation is due to Prof. D. W. Coquillett, at that time field agent of the department of agriculture, though the records of the patent office show that on the 14th of May, 1867, a Massachusetts man secured a patent on a process of "covering the entire head of the tree with a thin cloth of close texture, drawing the edges around the trunk so as to envelop the branches in a sort of sack. Near the tree I have a furnace over which is placed a pan

containing tobacco, pepper and other substances, the smoke from which will stupefy and kill the worms."

In California J. W. Wolfskill of Los Angeles was probably the first to take up the matter of the need of better methods for insect control. At that time, 1886-1887, the superintendent of Mr. Wolfskill's orchard in Los Angeles was Alexander Craw. In the report of the department of agriculture for 1887 Mr. Craw writes fully as to the efforts which began in 1884 to control the white or cottony cushion scale. The first attempt in that orchard to control the scale through the use of a tent over the tree was by the means of heat. A sheet iron stove was constructed conveying heat into the tent. The temperature was raised to 128 degrees Fahrenheit and held there for an hour. It killed the black scales but the white only thrived. The tree was also injured and the heat proposition was given up. Steam likewise failed. Six hours' submission to tobacco smoke failed; sulphur fumes did no harm to the scale and injured the trees or killed trees if used sufficiently strong to kill the scale. Concussion from gunpowder, muriatic acid, carbonic acid gas, liquid chloroform and gas from chloroform manufactured under the tent, arsenic, bisulphide of carbon and other fumes and gases were tried.

Prof. Coquillett's first experiment with hydrocyanic acid gas was in September, 1886. It proved successful in killing the scale but unfortunately seriously injured the foliage of the trees. The steps in perfecting this method of Prof. Coquillett's were many. Mr. A. B. Chapman and Mr. Titus of San Gabriel became impatient and requested Prof. Hilgard of the state university to send a chemist. In April, 1887, Mr. F. W. Morse was delegated for this purpose and he too discovered the efficacy of hydrocyanic acid gas. Later the state university issued Bulletin 71 written by Prof. Morse, from which Prof. Woodworth quoted liberally in his historical sketch. About that time the department recalled Prof. Coquillett from his investigations. He remained in California, however, and in connection with Alexander Craw continued the experiments in fumigation. His idea and that of Mr. Craw was doubtless to perfect a method which could be patented and prove a source of revenue. The introduction of the vedalia proved the solution of the white scale problem. In the section which is now Orange County another insect pest had been proving fully as disastrous as had the white scale about the city of Los Angeles. Dr. Wall and A. D. Bishop were using fumigation in the effort to subdue the red scale which was not only sapping the life of the trees but ruining the fruit. In the fumigation investigation it was found that on very bright sunny days the injury always present was more severe. This caused them to believe that the sun's rays were the cause of injury rather than the gas. Opaque tents which kept out the light were tried and a measure of success was secured. Then came the woman to the scene and Mrs. Bishop asked why, instead of going to the expense of making opaque tents, they did not do their work at night and that was

the beginning of successful fumigation.

For more than a quarter of a century the method of creating gas by putting together in one vessel under the tent sulphuric acid, water and dry cyanide has been followed, in spite of the fact that one of the first appliances tested out by Professors Coquiliet and Morse was the use of a pump to carry gas from the generator outside of the tent through the tent, pumping the mixture of air and the gas from the tent over this generator during the period of gas generation. This was soon set aside for the method of placing the vessel under the tent.

Now comes the fumigation machine, tested for the last two years, and for more than one year used in practical work. The machine used last year was known as the "Owl." This year another has been introduced, working on a somewhat different principle. This is called the cyanofumer. Two other forms of machines are being recommended and it is possible models will be made and their efficiency tested. None of these machines contemplate the pumping of gas into the tent but the generation is outside and the gas is propelled into the tent by its own explosive force.

Prof. Woodworth's sketch was made most interesting by slides showing the fumigation process as carried on in 1898. The photos were taken by J. W. Mills, at that time superintendent of the Pomona experiment station. Both the method of throwing sheet tents and the hoop tent methods were shown. Unfortunately, there seem to be no photos of the old-time derrick method of throwing the tent, as followed by Messrs. Bishop and Wall.

Chemical Injury

In Prof. Woodworth's next lesson the matter of cyanide injury was taken up. There are three types of injury, tip burning, dropping of mature leaves, and pitting of fruit.

Tip burning is caused by the cyanide or perhaps too strong dosage. In discussing this matter Prof. Woodworth referred to the activity of the gas with vertebrates, that is the higher forms of animal life are almost instantly destroyed by it. Scale insects are longer in being affected though flies and the more active insects show the effect much more quickly, being almost instantly killed. With many insects it is thought that the gas has more of a stupefying effect. Some forms of vegetable life are found to be more sensitive, for instance that in greenhouses, than insect life. The orange tree is fairly resistant but the tender tips suffer as a result of strong dosage.

The cause of leaf dropping is not definitely known but is more frequently observed in trees which are in poor condition.

Fruit pitting is sporadic, has caused great loss and is sure to cause contention when under discussion for there are differences of belief as to the reason for it. Prof. Woodworth's belief is that it is caused by free acid which certain atmospheric conditions permit to be carried with the gas at the time of fumigation. This acid he maintains is carried much the same as the mineral salt is carried in the sea fog, often for a distance of miles inland. In the laboratory experiments following his lecture Prof. Woodworth subjected several ripe Valencia oranges to treatment with acid. The "pits" produced seemed to be identical with those which are often showed in orchard practice. Four other theories as to the cause of pitting are that it is due to water which may be formed on

the fruit during fumigation, to mechanical injury such as scraping of fruit with tent carrying sand in its meshes, to lack of cyanide in the mixture generating the gas, or to residue left in the pots. Prof. Woodworth said that this residue would readily cause the pits but he maintained that it was because of free acid which it contained. The only suggestion made for prevention of this injury was for fumigators to be provided with litmus paper and carefully observe conditions during the whole process. As soon as tents are pulled from the trees if any drops are forming on leaf or on fruit blue litmus will determine as to whether it is acid. If it is acid fumigation should be stopped at once.

We may add here that Prof. Woglum, carrying on investigations under the direction of the department of agriculture, maintains that it is not the acid but the cyanide which causes these spots.

Mr. Robinson and Mr. Smith of Pomona both referred to an orchard which had been sprayed with a commercial lime-sulphur solution and had fruit pitted until it was of no commercial value. Others referred to the fact that some cyanides cause greater injury than others, still others to the fact that on foggy nights when tents have picked up moisture until they are almost airtight and hold a stronger solution of the gas the pitting is still more observable. Acids of different kinds have been observed to show more or less of this injury. It has been thought that machine fumigation would result in a lesser degree of injury but it is still observed.

In another lecture Prof. Woodworth demonstrated the various methods of estimating or of measuring the contents or surface of the tree. Mr. F. W. Braun gave methods of manufacture of the chemicals used in fumigation, the chemical action, and many other technical features of this important work were tested during the entire week. It is impossible to touch upon them all but we believe it is a most important week in the history of fumigation.

EXPERIMENT STATION WORK

A farm paper or an educational system which aims to reach farmers in all sections of California has before it a serious problem. There are all conditions from the perpetual snows of the mountains to sections of most intense heat far below the level of the sea. The experiment station of this state has endeavored to meet these conditions by establishing branches where the need is greatest. One of the most serious problems has been that which has confronted the desert farmer. He has gone into a section where agriculture has not been tested until a very few years ago. In the southeastern part of the state is a great section of some of the richest soil in the world, with an abundance of water but with intense heat through the summer months. This section has proved wonderfully productive but at the same time efforts to produce certain crops have brought disaster in their wake. In this far-away corner the state experiment station has established an experimental farm under the direction of Experimental Agronomist Walter E. Packard and it has proved most helpful to Imperial Valley farmers. On this experimental farm have been planted many crops which have succeeded, perhaps more which have failed, and in these successes and failures there

have been lessons for the farmers.

Of course there are being tested tree crops which will require years to demonstrate adaptability or non-adaptability to the section. Perhaps



At the top, reading left to right: John Waterman, Imperial Valley farmer; Walter E. Packard, Agronomist; Frank Viehmeyer, Irrigation Engineer.

The center picture shows shelter for thermometer, in front of it a rain gauge, and in the foreground an evaporation gauge. Reports from these instruments which are furnished by the weather bureau are made to the central office in Los Angeles regularly.

The bottom picture shows the growth in the Imperial Valley of the Imperial Japanese morning glory. Regarding this Mr. Packard writes that it does exceptionally well in this section, growing very rapidly and making an attractive appearance.

the most extensive experiments are those being made with different varieties of dates.

We give on this page illustrations taken on this experiment farm.

BELGIAN GARDENING

Written for California Cultivator
By Special Contributor

The war in Europe has undoubtedly destroyed the wonderful market gardens around Brussels, Liege, Ghent and Antwerp. These gardens were two to three acres in extent and three or more men per acre were employed in the cultivation of the land. Much of the land was under glass. The land in these garden tracts rented at from \$25 to \$40 per acre. The cost of fit-

ting them up was from \$60 to \$125 per acre more, and the yearly cost of manure from \$25 to \$75.

What wonderful things these thrifty and wise gardeners could do on our rich river bottom lands with our mild year-round climate as compared with that of northern Europe.

Before the beginning of the war there was a movement well under way to bring much Belgian money and a great many good Belgian farmers to California. When this plan was being discussed the people from Belgium were quite positive in their statements that the people to be brought here should be carefully selected in Belgium—that there are "undesirables" there just the same as here. Only good farmers, with big families and all willing to work, were to be brought.

All of which brings to mind the thought that the "Bring the Belgian Here" program now being discussed requires careful thought and judgment.

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Tommy—How did your mother know you went swimming? Were you caught with the goods on you?

Tommy—Naw; she caught me with the goods off.—New York Sun.

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Deciduous

Fruits

KEEP A LOOKOUT FOR PEAR BLIGHT

Written for California Cultivator
By Sacramento Valley Contributor

A GOOD many pear trees have been set out in California during the past few years; lots of them are now one and two years old.

Ordinarily pear blight does not show up much before trees are three or four years old, or until they produce considerable bloom, and most pear planters figure that they have the first few years free from trouble.

It is well, however, to keep a continuous lookout for blight from the time growth begins the first year.

In one two-year-old Sacramento Valley orchard which is planted on new ground, as far as orchard trees are concerned, and where the nearest pear trees from which blight could have come are at least five miles away, a tree was discovered that was blighted almost to the ground. And this in an orchard that receives the best of care and attention, where it would be expected that the first sign of blight would be noticed.

It just goes to show that a pear orchard must have constant attention and inspection. At least once a week some one should go through a young pear planting and take a look at every tree. This might be done constantly every week during the growing season for one, two or three years, without finding a blighted twig, but at any time during this period he might find a piece of blight and save at least one, perhaps many, trees.

Blight should be cut out as soon as discovered, taking care to cut well below the diseased part and disinfect the knife or shears after each cut. The blighted limbs should be carefully burned.

NURSERYMEN'S ASSOCIATIONS (Continued from Page 171)

general discussion was given to the matter of transportation we quote from the report of Mr. Roeding, who is a member of the regular transportation committee:

"Following the instructions of the convention, the Fancher Creek Nurseries adopted a follow-up plan with all the freight shipments made in the winter and spring of 1915. Arrangements were made with the interstate commerce bureau, Los Angeles, to co-operate in this matter. The total number of shipments made by rail during the season was 6,129. With each shipment made the following notice was pasted on the invoice:

NOTICE

It very often happens that incorrect rates are applied on shipments of nursery stock. To protect our customers' interest we have arranged with the Interstate Commerce Bureau, No. 438 Bradbury Building, Los Angeles, California, to check up all freight. We will appreciate it if after paying your freight bill you will mail it at once to the address given. In case of an error a claim will be entered on your behalf.

Only 57 customers out of this number mailed their expense bills to the bureau, and of these there were 12 in which errors of billing had been made. The largest claim was one of \$6.29 in

a shipment made to Texas. The total amount of all the claims was \$15.37. The response on the part of customers was disappointing, but if they were not sufficiently interested they were the ones to suffer for the nursery had used its best endeavors in their behalf. If nothing else was accomplished it at least demonstrated a plan by which the nurserymen could protect their customers from being overcharged, and for nurserymen, particularly those who are located outside of California and who make it a business to sell exclusively through agents and make delivered prices, an institution conducting business along the lines of the interstate commerce bureau would be the means of saving them a great many dollars undoubtedly on their shipments.

"All claims are paid by the consignor by check from the railroad companies and one-half of the amount received is paid to the bureau for its service.

"Your committee would recommend that other nurseries follow out this plan of procedure."

Regarding classification of nursery stock Mr. Roeding referred to the efforts of Mr. Merriweather and the fact that he had secured a number of new classifications which were saving much to nurserymen. Especially has there been a saving in the matter of balled citrus and ornamental stuff. The former rate on this class of goods was absolutely prohibitive to some points.

Regarding uniform legislation State Horticultural Commissioner A. J. Cook presented his views:

"I still hold that legislative action should center in the state officer, that laws should first protect the actual grower, the producer, after which every possible energy should be used to foster other industries and aid citizens of all states of our country. We should all work to procure wide and thorough inspection that insect and fungoid pests may be suppressed. At present we must submit to double inspection as we cannot trust to inspection at the initial point, but the logical course would be one inspection at the point of shipment, and we hope that at no very distant day, at least in the state, one such inspection will be performed so thoroughly and conscientiously that all will respect it and ask or wish for no more. Within the state, if the entire service is centered in one competent, wide-awake, untiring and conscientious official, might we not hope that very soon we could realize this very desirable improvement in our service.

"Once more, the action of our West Coast Nurserymen in their arduous labor to secure a general law that would be so elastic as to be adaptable to every state, when amended to meet local needs in each case, their evident fairness and desire that all should have a square deal in their endeavor to frame an act that would be fair to all and safeguard all parties, growers as well as their own confreres, prove that they only wish what is just and equitable to all alike."—M. C. H.

From the many excellent addresses of a general nature made before the convention we quote one entire, that of Mr. Almon Wheeler, of the Santa Clara Valley, this state. We choose

this one because no other horticultural topic is of more widespread interest at this time from Vancouver to San Diego than is the walnut.

* * *

THE WALNUT

By Almon Wheeler

All things considered, there is nothing along the line of endeavor in horticulture with a more promising future than the walnut.

To the intending planter, whom the bugbear of over production may incline from the standard fruits which have been and are being planted so extensively each year, we suggest that he meditate seriously upon the walnut and be convinced that he may expect as good results from his labors and as reasonably large financial returns as from any other.

Along the Pacific Coast there is such diversity of soil and climate that it is possible to grow all the fruits and nuts of the temperate, many of the semi-tropical countries, and perhaps some few of the tropical. This being true why should we incline too much to the same thing?

That the walnut has succeeded is proven by the great orchards of the South which have been producing profitable crops for many years past and according to reports will surpass all records for the state this present season. To show how the state authorities at Berkeley regard the walnut we quote from their bulletin No. 231, a book of 400 pages: "The present bulletin represents the results of the most extensive, and perhaps the most important investigation undertaken by the department of plant pathology since its formation." Then again from the same bulletin: "Under favorable and normal conditions walnut growing is one of the most attractive horticultural pursuits which can be imagined."

The trees require comparatively little care compared with citrus fruits and they are subject to comparatively few pests or diseases. The price of the crop has been almost invariably good and first class walnuts have always sold readily and at excellent prices. The product is not subject to decay, freezing, or other dangers which are common to most fruit crops. No unusual skill is required to conduct a well established walnut grove, and all in all this crop is, as said above, perhaps the most attractive and the best adapted to the average settler coming to California where favorable conditions for its production obtain.

This paper is not written by one possessed with expert and technical knowledge nor one who by close study and investigation is ready to announce anything new or startling, but rather by one who has planted the young tree, cared for it from infancy to the bearing age, and who looking back can profit by mistakes and proffer when wanted a little advice to the beginner. Nor will we attempt any lengthy discussion of varieties, rootstocks, pruning or the lack of pruning, etc., for you will find as many different opinions as there are owners of walnut orchards, but will merely touch upon the subject in a general way.

Though walnuts like many other fruits may live and grow on indifferently to a somewhat uncertain maturity in various locations, it is equally true that they succeed in some localities and soils better than in others, and as we all plant orchards with the expectation of profitable returns, it may be taken for granted the intending planter has satisfied himself that he has made a wise selection of both and has the necessary moisture conditions, either naturally in the soil or to be

obtained artificially by irrigation. These are the first and vital requisites, and after them comes the selection of variety or varieties.

By far the larger number or we might say practically all the orchards of the south are of the improved seedling varieties of the English nut. These have been and are subject to great loss from the blight, for which there is no adequate remedy known up to the present time. It is thought by many that the late blooming French varieties, grafted on the native Black root are immune to this, and our experience in Santa Clara County tends strongly to confirm this belief.

This past winter of heavy and continued rains and the cold damp spring have been very favorable to the infection, and in the seedling English trees, though heavily loaded with nuts, the crop will be practically worthless as the proportion of light nuts will be so large that it will be very difficult to interest buyers in such stock.

These conditions are responsible for the slight indication of its appearance in the French, and it follows that the same conditions are responsible for its unusual severity in the seedlings, but they are affected more or less every season and are very uncertain.

Then the late blooming qualities of the French sorts will appeal to the careful planter, starting as they do from April 15 till along the middle of May, according to the locality, escaping the danger from late spring frosts that are often the undoing of the less favored varieties. Another very important feature of the walnut arises from the fact that those on the Black California root can be successfully grown where other trees have died from the oak fungus, and many orchardists are now thus planting, finding it fruitless to replace with the same tree or others subject to the fungus.

As regards bearing, it may be that the seedling will eventually become the larger tree and a heavier bearer, but with the larger nut, superior flavor, light colored shell and kernel and higher market price, the Franquette and Mayette type greatly excels and is the only safe and profitable one to plant in Central California.

If you have heretofore doubted, from ignorance or habitual scepticism, the bearing qualities of the French, assure yourselves from the San Jose Mayette orchard of Mr. Wiltz, the Franquettes of Judge Leib, the George Payne orchard, the home of the famous Santa Rosa tree with a record of 712 pounds of nuts in one year's crop, and even the modest young orchard of the writer at Morgan Hill, and you will see trees with such loads of the finest, largest nuts, that you will all become enthusiastic boosters for the walnut.

As for soils, a deep, warm, strong, well drained soil is the ideal, but that they will grow and bear profitably elsewhere is proven by the trees we see in black, heavy adobe and in soils that were once thought adapted for grapes only.

Did you ever see a roadside avenue of walnuts and note the tree opposite the house, where it got the surplus water from the lawn, how much larger, stronger and better filled with nuts it was than the rest? Then plenty of moisture but no hardpan to hold water and rot the roots.

As to overproduction, that spectre that seemingly haunts the citrus man, the prune man and others, the walnut man may not fear for a long time to come, as statistics show that with a steadily increasing consumption only about 30 per cent of the product is produced in the United States, which means the Pacific Coast and, perhaps we had better say, California. The plantings of walnut trees in past years, though considerable, are insignificant compared with plantings of other fruits, and with such limited plantings it will be foolish to worry about too much of a good thing. When the Franquette and Mayette and kindred

varieties are grown in sufficient quantities to be offered in all the markets of the country, such a demand will be created that it will be limited only by our ability to supply and the power of the consumer to buy.

Let us quote from a letter written to us by a man of wide experience and connected with one of the leading fruit industries of the state: "The sack of walnuts (Franquette, 100 pounds) arrived in due time and they have been an absolute revelation to us, being far and away the best walnuts we have ever seen. There is certainly a big future in the walnut industry if such walnuts as these can be produced. We have not known that there were such walnuts."

We may add that this same gentleman has already placed an order with us for 150 pounds of the coming crop for his personal use.

Isn't this creating a market?

STATE ASSOCIATION OF NURSERYMEN

Fred H. Howard, president of the State Association of Nurserymen, presided at the state sessions. In his opening address he took exceptions to the conduct of the state horticultural commissioner's office, and said: "As regards the parcel post, the nurseryman has been deprived of it as a means of transacting business. The system of enforcing inspection at the point of arrival, and obliging someone to pay extra postage after the shipment has been examined and re-packed is detrimental to us."

On this latter topic former President Coolidge made an address. He touched upon the impossibility of shipping plants under the present postal regulations of state inspection. The re-packing and re-shipping made necessary by the regulations mean the destruction of many of the more delicate plants. Mr. Coolidge closed by saying:

"The florists and nurserymen do not object to the state inspection of their crops in order that a clean bill of health may be had. They know well enough and appreciate fully the value of cleanliness without which healthy growth and the best results cannot be expected. Moreover, without a strict system of inspection under government control the man who took pains to keep his nursery or plant establishment clean would often find that a careless neighbor would to a large extent upset his labor by not spraying or operating against the diseases or insect pests upon his stock. State inspection is necessary in a country like ours and indeed ought to be enforced in all lands where advanced cultivation exists."

"What the trade does object to, however, is, first, incompetent inspectors and those that are tactless—and both are perhaps common enough; second, the really silly rules, regulations and orders such as are issued from time to time by goodness knows who. The post office order is a trade-strangling, impracticable, perfectly inane piece of official ruling. Can there be no appeal?"

The committee on nomenclature, consisting of Messrs. Branton, Clarke and Armstrong, reported as to the adoption of the code of the American Pomological Society, reporting also as to progress made in the endeavor to work over a list of California trees which should be submitted to the American Pomological Society and approval for such list secured. The committee also recommended that this work be carried on until the desired list is secured.

"We recommend to the incoming committee for 1916 the compilation of a complete list of fruit tree names found in catalogues of firms selling stock within this state, or in lieu of such action it might be still better to have appointed a special committee to appear before the convention of the American Pomological Society, which convenes at Berkeley, September 1-3, to secure their aid and cooperation and at once compile such list, that it may be officially adopted and sent out by the secretary to all members before fall catalogues are printed. The way to adopt is to adopt."

Receptions were tendered, which with special days given over to the nurserymen at the Panama Pacific International Exposition made this fifth convention of the State Association of Nurserymen one of pleasure and of great importance.

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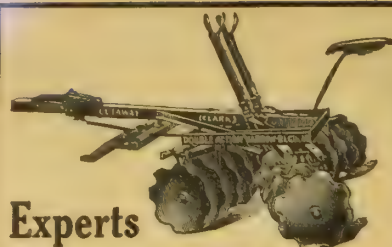
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Small Fruits

Vegetables

ON SLUGS

Written for California Cultivator
By T. R. Woodbridge



WONDER if the following data will be of interest to those of your readers who have a garden? I have read everything I can find on how to kill slugs and finally decided to make a few tests myself, after a rather terrific fight during a bad invasion. By "slug" I mean the thing that looks like a shell-less snail. I take the following from my notes:

Experiment No. C-25

Subject, Slug, 6 inches long when crawling.

Placed in a shoe box containing wet sand and covered with wire screen.

First day—No food.

Second day—Lettuce leaf heavily

NAMING GARDEN VEGETABLES

Report of Committee on Nomenclature and Varieties as Adopted by Vegetable Growers' Association of America

(A) Kind: The term "kind" as herein used shall be understood to apply to those general classes of vegetables which are grouped together in common usage without regard to their exact botanical relationship—as tomato, cabbage, kale, pepper, cucumber, etc.

(B) Variety: The word "variety" shall stand for plants of the same kind which show a common tendency towards the same characteristics and variations in habit of growth and of market product, independent of the immediate heredity or the effects of local climatic and cultural conditions.



THE MOST ECONOMICAL WEED KILLER

covered with arsenic (white oxide). All eaten that night.

Third day—No food.

Fourth day—Lettuce leaf heavily covered with corrosive sublimate (bichloride of mercury). All eaten that night.

Fifth day—No food.

Sixth day—Lettuce leaf covered with calomel (monochloride of mercury). All eaten that night.

Seventh day—No food.

Eighth day—Lettuce leaf covered with strychnine. All eaten that night.

Ninth day—No food.

Tenth day—No food

Eleventh day—Lettuce leaf covered with cyanide of potassium (about one-tenth of a teaspoonful). Piece of about one-quarter inch in diameter eaten by morning.

Twelfth day—No more eaten. Slug crawled out of box during night, and for ten feet along bench and then crawled into box again, as shown by slimy trail and loosened cover.

Thirteenth day—All leaf eaten.

Fourteenth day—No food.

Fifteenth day—No food.

Sixteenth day—Unpoisoned lettuce leaf, eaten greedily in short time.

Seventeenth day—Tempted to free the slug, but prudence prevented, as the strain proved too resistant. Sprinkled with salt, but too slow, so smashed him, or her, with a piece of board. Slug dead.

This probably explains why the attempt at poisoning in the garden failed. Have found caustic lime to work as long as fresh. But the best plan I have found to be that of hunting with an electric glow lamp after 10 p. m. and dropping the game into a pail of gasoline. Some toads we have acquired are helping considerably.

(C) Strain: Shall stand for plants which are vegetative parts or the lineal descendants of some plant which showed to a noticeable degree the habits of the variety or of one or more of its distinct characteristics and an ability to transmit such characteristics.

(D) Stock: Shall stand for plants of the same variety, strain and heredity, or when used with a possessive, to those grown by or under the immediate supervision of the same individual or firm.

(E) Sample: Refers to a small portion of a variety, strain or stock which represents the average quality, uniformity, mechanical purity and cleanliness of a given lot of seed or plants.

Registration

(A) The Vegetable Growers' Association of America should maintain a registration bureau which shall act in cooperation with similar committees of the American Seed Trade Association, American Pomological Society, Nurserymen's and Florists' Associations, and other similar societies to secure uniformity in rules and practices of varietal nomenclature and registrations.

(B) The listing of proposed introductions and novelties by the originator or discoverer shall be encouraged in every way.

Naming

(A) The paramount right of the originator, discoverer or introducer of a new variety, strain or stock to name

it, within the limits of this code, is recognized and emphasized.

(B) No two varieties of the same kind of vegetable should bear the same name. The name first published for a variety should be the accepted and recognized name, except in cases where it has been applied in violation of this code.

(C) Where a given variety name through long usage has become thoroughly established in American horticultural literature for two or more varieties, it should not be displaced or radically modified for either sort, except in cases where a well known synonym can be advanced to the position of leading name. The several varieties bearing identical names should be distinguished by (1) adding or prefixing the name of the originator, discoverer or introducer or the author who is first known to have described it, or (2), by using in like manner some distinguishable term that will insure their identity in catalogs and discussions.

(D) Existing American names of varieties which conflict with earlier published foreign names of the same, or other varieties, but which have become thoroughly established through long usage should not be displaced.

(E) That name of a variety of vegetables should consist, if possible, of a single word, and in no case should it consist of more than three words, including that of the originator, discoverer or introducer, in case the latter is to be incorporated in the name.

(F) In selecting names for varieties, the following points shall be emphasized: distinctiveness, simplicity, ease of pronunciation and spelling, indication of origin or parentage, or some readily distinguishable characteristic.

(G) No variety should be named unless distinctly superior to existing varieties in certain important respects, or until it has been determined to retain it.

Tests

(A) Authorized reports of comparative trials of any proposed introductions should be secured, horticulturists of the U. S. department of agriculture and of any state agricultural college or experiment station being ex officio authorized to make such reports.

(B) In the case of samples voluntarily submitted for trial all information concerning the same should be held strictly confidential until it has proved or disproved its claim to registration. All material submitted for test shall be used for that purpose only, except where written consent has been given to the contrary by the party or parties submitting the same for test.

(C) Varieties voluntarily listed for testing shall be exempt from publication if the party or parties listing the same shall so desire, provided no effort is later made to introduce the variety in disregard of this set of rules, in which case the committee shall be authorized to publish the name of the parties from which the sample was obtained with the reason for refusal to register it.

(D) Existing varieties shall also be tested in comparison with each other. Where those of recent introduction are found alike, the originators or discoverers shall be urged to agree upon a common name. Where a recent introduction is similar to a fully established variety it shall not be recognized as a separate variety, but the facts shall be reported as hereinafter provided.

Publication

Publications concerning recent introductions and sorts proposed for registration shall be made in some prominent horticultural periodical.

In cases where registration is allowed such a publication shall consist of an accurate definition of its distinctive characteristics and merits in comparison with related varieties, the name of the originator or discoverer, and time and date of introduction. If no satisfactory complaints are lodged against the same within one month from date of publication, the variety shall be considered as formally registered.

Gravenstein Apple Show At Sebastopol

Great Throng Gathers on Opening Night to Usher
in the Sixth Annual Event. M. C. Holman
Writes of the Show for Cultivator
Readers.



It was a beautiful sight that greeted the eyes of the thousands of visitors on the opening night of the Sixth Annual Gravenstein Apple Show at Sebastopol. The great tent was brilliantly lighted and hung with festoons of varicolored ribbons which formed a charming rainbow canopy under which the art and magic of the Gravenstein found its most pleasing expression.

It was beautiful music that greeted the ears of the visitors, for Patriarch's Military Band of Petaluma rendered a program of classic and popular selections.

It was a happy throng that wended its way through the great aisles lined with wonderful constructions in apples, and that felt the thrill of exquisite beauty everywhere.

Sonoma County was not thought of as a great apple growing section back in 1876, for it was then that the giant redwood claimed the wealth of fertility. There were at that time seven large saw mills which were fast reducing the great trees to commercial lumber. And old settlers looked with sorrowing hearts to see the landmarks passing. There seemed nothing to take the place left vacant by the hewing of the forests. But gradually Gravenstein trees were planted. Soon they began to produce fruit, and this fruit came earlier in the Anale Valley than elsewhere in the state. The opportunity was realized and thousands of trees were planted, land values advanced, and in this section, where once the giants of the forest held undisputed sway, were now thriving the little trees with their luscious fruit.

And the Gravenstein has continued to be the main object of cultivation and development, until at the present time there are thousands of boxes shipped from the Sebastopol section every year.

The first thought of giving a Gravenstein exhibition came to the minds of the prosperous people of Sebastopol in 1911. They saw that they would have a good year and realized that the greatest good they could do for themselves and for Northern California would be to let the people know of the fruitfulness of their wonderful soil.

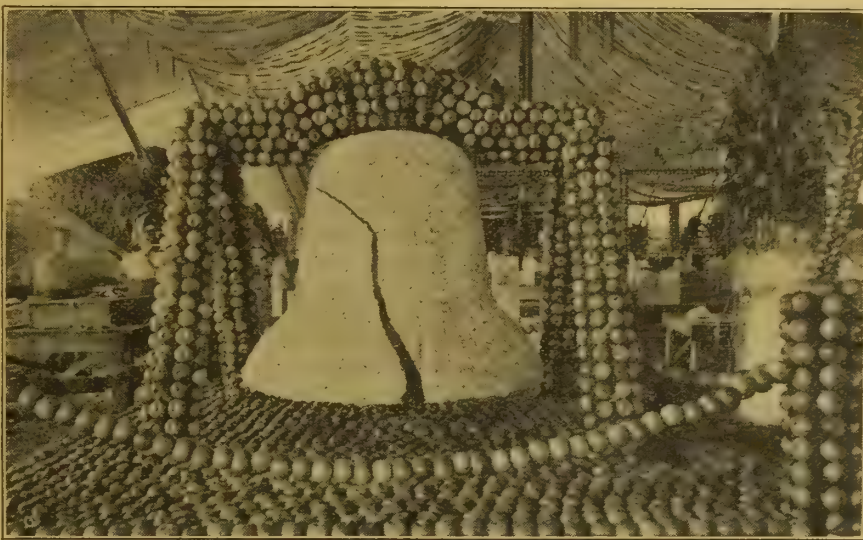
And so the first show was launched under the watchful eye of Mr. J. P. McDonnell and Mr. Edward H. Brown, who have been two of the foremost boosters for Sonoma County and Anale Valley. It was a marked success, in fact so great was the interest shown that the Gravenstein Apple Show Association was formed and the determination made to have the exhibit an annual event. This plan has been carried out, and the Sixth occasion finds greater development in beauty and utility than ever before.

The Gravenstein Show is always made up of wonderfully conceived and carefully executed designs. Fancy goes the limit, while perseverance and energy seem to have no limit. First and foremost in this present exhibit is the Liberty Bell, that emblem of

American freedom which is loved by every one, whether found at Old Independence Hall, Philadelphia, at the Pennsylvania Building at the Exposition, or at the Gravenstein Show.

The Living Tower of Camp Meeker stands as the skyline construction. It is five apple stories high and reaches to the apex of the mammoth tent.

As a fitting honor to Mr. Burbank his home is excellently reproduced by the Santa Rosa Chamber of Commerce,



Liberty Bell Feature, One of the Most Attractive at the Apple Show

the artistic work being in the hands of that body.

The Fountain, with its sparkling life and vibrant activity, centralized by a revolving double star, is easily one of the leading features.

The Merry-Go-Round, which earned its name, is the cynosure of all young eyes, and we doubt not many of its youthful admirers would gladly have chanced a ride in the commodious chairs.

The coolest and most restful spot is that offered by Mr. F. H. Grohe of Santa Rosa. His moss covered pergola, with its ferns and beautiful flowers, at once suggested the idea of perfect rest and contentment.

The Japanese Tea Garden, fashioned by Mr. B. A. Crabtree, is a really appetizing work and only lacks the dainty maids of the Orient and the fragrance of the tea to make it in actuality what it is in apples.

There is also the practical side, the car load exhibits, both in boxes and wagons, together with various products of the apple such as jellies, jams and pies.

An added feature of this season's exhibit is the display of poultry given under the auspices of the Sonoma County Poultry Association, and the interest shown for the birds gives assurance that this feature will be made a part of each future show.

It would be unfair to horticultural and agricultural skill if we failed to mention the exceptionally commendable work done by the Hallberg Ranch. This ranch is situated about three miles from Sebastopol and comprises 126 acres. For diversity of products we do not believe it can be excelled. As an example of what may be done on one piece of ground the following

specimens were on exhibition, showing the great variety of production from this one ranch: Thirty-four varieties of apples, 7 varieties of peaches, 8 varieties of berries, 10 varieties of potatoes, 13 varieties of corn, 5 varieties of plums, 3 varieties of pears, 4 varieties of cherries.

Adjoining the main tent is the commendable spray pump exhibit of the Bean Spray Pump Company of San Jose. This enterprising concern, which recently suffered a very serious fire, is always on hand to show its excellent methods for eradicating insect pests of all kinds.

We can hardly think of a more completely satisfactory apple show. Nothing is overdone. There are no fakirs, which sometimes disgrace an exhibit of this kind. Every effort has been put forth that the worth of the Gravenstein apple may be made known and that the land of its nativity may be held in pleasant memory by all visitors.

PRUNE CULTURE

(Continued from Page 171)

very dark and dirty. Those new to the business should visit some of the best prune curing plants before their own crop comes on. Directions may be followed ever so carefully, but only experience, expert knowledge, can determine the exact strength of the lye as well as the proper consistency of a well-cured prune. The skin of a prune must be well wrinkled when it comes out of the lye bath, but it must not be broken or show the least sign of peeling. If it does the solution is too strong or the fruit has been held in it too long. Robe de Sergeant and Imperial prunes are both more liable to bruise than the French, therefore more care should be used in their case to see that the ground is smooth and soft. The solution must be kept actually boiling, which makes a tubular boiler a necessity. It pays to use the most up-to-date methods and to use more care in every detail. Prunes, as all other fruits, are better when cured slowly. A few days or a week exposed to the hot sun, and then it is well to stack the trays. Judgment must be used at this point, as previously, for if the weather is cool, or if an early shower should be threatening, it would be safer to keep them on the trays until dry enough to box. Do not let the prunes get too dry so that they "rattle," but they must not be so soft that any of the pulp can be squeezed out; the meat must be tough all through.

Large prunes, especially Imperials, require turning while on the trays; this is easily done by using lightly an ordinary broom. This prune should be picked at least every other day, and in hot weather daily, as it will soon show dark spots in the flesh if exposed to the sun on the ground before dipping. It really requires expert handling to make a first-class article of Imperials, which then is worth 10 cents or 12 cents a pound, so the extra time spent on it is well invested.

The practice of shaking prunes onto a canvas is not to be commended. The temptation to clean up the crop at one job is too obvious, and this haste is of all things to be avoided; let the fruit drop naturally.

Ripe prunes, properly handled, while not black when they are dry, will become so in the bins, where they undergo a process of "sweating" for a week or two. They are then graded by machinery and packed as the market requires. Before packing prunes are often dipped in a weak brine, five pounds of salt to 100 gallons of water, which cleanses them and aids in bringing out a rich, black gloss.

Large prunes pitted, or pitted and stuffed with nut meats, and packed in fancy cartons, will some day become an extensive commercial product in California. A few years ago the writer paid as high as 60 cents for a half-pound tin of Imperials, pitted, in the town of Agen, France, the center of the prune industry. The fruit was deliciously tender, and a most superb confection. To the present time no effort, or very little, has been made at home to prepare fruit for the markets that will take such goods. We import them. This should not, and need not be.

HE ADMIRER HER JUDGMENT

She—Oh, Fred, dear, you are so noble, so generous, so handsome, so chivalrous, so much the superior of every man I meet, I can't help loving you. Now, what can you see in plain little me to admire? He—Oh, I don't know, dear, but you certainly have very good judgment.—London Tit-Bits.

FLORIDA MOTORIST SUGGESTS ROAD RULES FOR LINCOLN HIGHWAY

Evidently the road rules in the Evglade state are not favorable to the motorist. At least the tourist who sent in the following suggestions to the Lincoln Highway Association as rules of the road to be observed by the thousands of transcontinental tourists of this summer must have had some bitter recollections.

Upon close inspection it will be seen that a gentle vein of satire prevades the suggested list. This motorist says that they are the general rules which must be observed about Jacksonville and, if they are successful and popular there, why not along the Lincoln Highway?

Rule 1—Upon discovering an approaching team, the automobilist must draw to one side of the road and cover up his machine with a tarpaulin painted to correspond with the scenery.

Rule 2—The speed limit on country roads this year will be secret, and the penalty for violation will be \$10 for every mile an offender is caught going in excess of it.

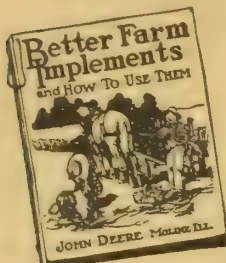
Rule 3—On approaching a corner, the automobilist must stop not less than 100 yards from the turn and the mechanic must be sent ahead to blow a horn, ring a bell, fire a revolver and send up three rockets at intervals of five minutes.

Rule 4—Automobiles running at night must send up a red rocket every mile and then wait ten minutes for the road to clear. They may then proceed carefully, blowing their horns and shooting Roman candles.

Rule 5—In case a horse will not pass an automobile in spite of the tarpaulin, the automobilist will take the machine apart as rapidly as possible and conceal the parts in the grass.

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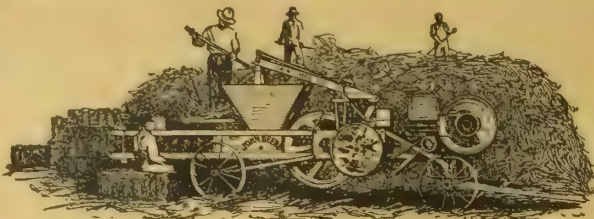


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It tells about John Deere Implements: Steel plows, cultivators and harrows; corn planters, disc harrows and beet tools; farm and mountain wagons; manure spreaders; portable and stationary grain elevators and corn shellers; hay loaders, stackers, sweep rakes, mowers and side delivery rakes; motor hay presses; grain drills and seeders; full line of chilled plows; grain binders and corn binders; hit-and-miss and volume-governing gasoline engines.

To get this book free, state what special implements you are interested in and ask for the book as Package No. X-111.



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The Press with the powerful eccentric gears. Gears are mounted off center, giving more power on the working stroke, a quicker return of plunger and very desirable action of the self-feed—the three points of prime importance.

Easily bales 2 to 4 tons per hour without any jar or shock.

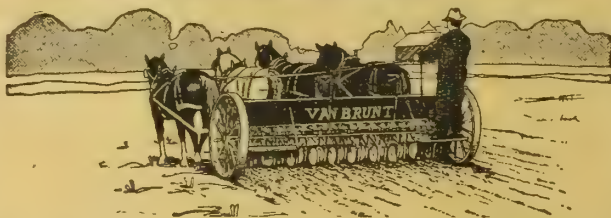
Powerful self-feed arm and plunger, improved form of drop blocker and automatic tucker insure well shaped, firmly packed, smooth end bales,—the kind that bring the highest price.

Entire outfit is always ready for work. No lining up of engine required.

Wide track front axles with a fifth wheel is why this press stands up so well and is so easily moved.

Made in three sizes for 14x18, 16x18 and 18x22" bales.

Write if interested in Hay Press, Loader, Stacker, Side Delivery Rake or other hay tools—and ask for free book, "Better Hay—How to Make and Market It".



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Van Brunt Drills never choke. Adjustable gate force feed compels an even, continuous flow through each seed tube. Amount sown regulated simply by moving a lever.

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Van Brunt Drills are light weight, light draft, well balanced and strong. Frame is rigid; hopper does not sag; the gear drive is positive (each wheel drives half the feeds) and the disc bearings are guaranteed to last lifetime of drill. Spring steel scrapers keep the discs clean.

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John Deere Publicity Department, Moline, Illinois

Economics

on the Farm

STATE MARKETING COMMISSION AND POTATO CERTIFICATION

Written for California Cultivator
By Harry A. Chamberlain, Assemblyman from the 72nd District



STATE commission market to deal in agricultural, fishery, dairy and farm products of the state on a commission basis is another creation of the 1915 California legislature.

The state commission market is to be under the management and supervision of a market director to be appointed by the governor at a salary of \$5,000 per annum. An appropriation of \$25,000 was made to establish the market.

Under the supervision of the commission director, depots and stations are to be established throughout the state for receiving and disbursing products from the producers to the consumers. Rules and regulations for the operation and conduct of the market are to be supplied free of charge to the general public.

Under the act passed, all producers of agricultural, dairy or farm products or products manufactured or processed therefrom, or fishery products which are grown, raised, produced, processed or manufactured within the state, shall have the right to consign and deliver their products to the state market at any of its established depots or stations. The market shall sell and distribute the products to dealers, consumers and all buyers to the best advantage of the producer for a small commission to be fixed by the market director.

Another feature of the state market is to be the gathering and disseminating of information on all subjects relating to the marketing of California products in order that the producers, and consumers as well, may keep posted as to the supply and demand and current prices of their products.

It is expected that the market will prove self supporting, as the act creating the new department provides that sufficient commissions for the handling of produce shall be charged to gradually build up a revolving fund to be used for the operation and extension of the marketing system. A standard for California certified seed potatoes is fixed in another bill passed which prohibits the sale of any potatoes as certified seed potatoes unless they have been inspected and certified to in accordance with the following requirements:

The growing potato crop shall be inspected by deputies of the state horticultural commissioner once during the blooming period, again as the plants begin to mature, and again after the crop has been harvested and graded.

Potato fields showing a mixture of more than 250 hills per acre with any other variety or varieties or showing more than 500 weak hills or more than 50 hills affected with blackleg shall be disqualified for certification unless the mixed and weak or diseased hills are removed from the fields under the supervision of the inspector.

At the time of the second inspection the inspector shall dig and weigh at least 100 hills per acre, and if five

per cent of the hills so dug each weigh less than 30 per cent of the weight of an average hill, the crop shall also be disqualified for certification. Disqualification for certification, however, shall not prevent the grower from selling the potatoes, but they shall not be sold as certified potatoes.

After the crop has been graded it shall be inspected according to the following requirements:

The selected potatoes after being graded shall be free from any infestation of eelworms, larva or tuber moth, or infection of wart disease or powdery scab, and shall be practically free from necrosis or infection of late blight. They shall in the judgment of the inspector be free from serious infection of scab or rhizoctonia, with not over five per cent light infection of scab or ten per cent light infection of rhizoctonia. They shall not contain more than eight per cent light infection of wilt disease and not over two per cent of deep infection of wilt. They shall also be free from any mixtures of colors or distinct types and shall be reasonably sound and free from cuts or bruises or second growth, and shall conform in shape to the varietal type. Not over five per cent of the tubers shall weigh less than one and three-fourths ounces and not over five per cent shall weigh more than twelve ounces.

Growers of potatoes which meet the requirements of the act shall be given by the inspector at the time of making the last inspection, a certificate stating that the potatoes conform to the provisions of the law. All potatoes sold as California certified seed potatoes shall bear on the package or container the certificate of inspection, net weight of contents at time of packing, date of inspection, and the date of packing.

FARM BUREAU

Solano County, J. W. Mills, Adviser, Fairfield

The Solano County farm advisor will hold meetings as follows during the month of August:

Rio Vista, August 17.

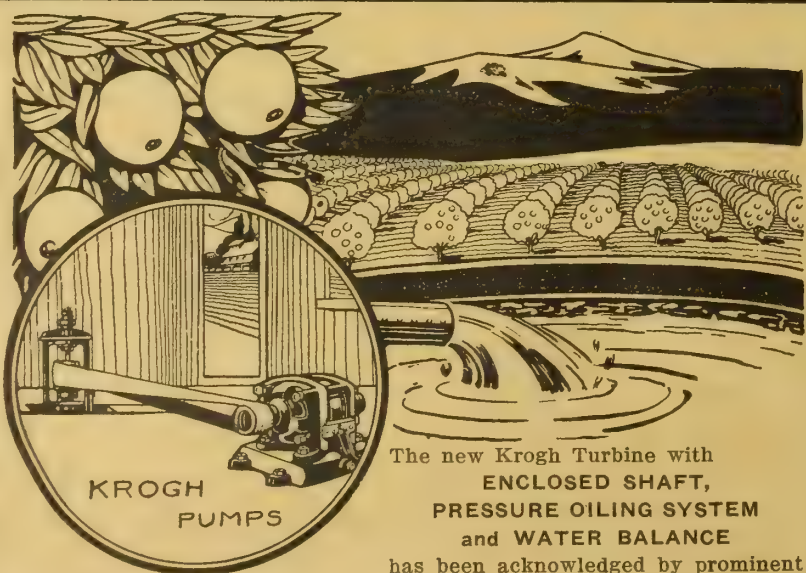
Vallejo, August 19.

Suisun, August 24.

Dixon, August 26.

There may be special meetings called at Dixon and Rio Vista.

Since the Solano County farm adviser commenced work in March, 1915, several projects have been mapped



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out and some have been given a substantial start. A farm bureau swine breeders' association has been formed and is in running order, a campaign against squirrels and obnoxious weeds has been started, demonstrations for improvements in the marsh lands and wheat production in the Montezuma hill country are mapped out for the coming season; a farm bureau colt and horse show will be held at Rio Vista on September 9. This promises to be the biggest event that Solano County has ever pulled off. The board of supervisors gave the local unit \$500 for prizes to those showing the best stock in different classes. The colt and horse show will be the chief event, while water sports on the Sacramento River, a water pageant on the river

in the evening, fireworks and grand ball will complete the festivities of the day.

About 500 tons of alfalfa hay have been disposed of in the Dixon district by the farm adviser, and a movement will be started to form an alfalfa growers' association. A campaign is being started by the adviser to plant the county roads with nut trees. This is to be in conjunction with the thistle campaign, killing two birds with one stone.

The demonstrations in the Montezuma Hills and on the marsh lands are of great importance as they should lead to a heavier production of grain on 60,000 or 70,000 acres of some of the best grain producing land in the state.

heated, made tea in my mess tin, and had bread and jam for dessert.

"The rations are very carefully measured out, so if we have a fair feed one meal the next one is a bit minus. Two or three hard biscuits, half pound bread, a small tin of jam, and a small tin of bully beef per man daily form the menu—forgot the ham in the morning—I never eat it anyway. Down at the base we get cheese occasionally, and tea and stew are made for us. I could drink a gallon of tea every day, but the man says 'No.'"

TIME TO CUT ALFALFA HAY

There is much inquiry on the question as to the proper time to cut alfalfa hay. Experiments carried on by the chemical department of the Colorado experiment station a number of years ago showed that the greatest feed value in a particular crop was present when the crop was in full bloom. It has been worked out, however, that this is not always the best time to cut the crop to get the greatest annual yield. There are two reasons for this; first, if the crop is allowed to go until in full bloom a considerable amount of leaves will be lost in the process of harvesting or drop to the ground before the harvest; second, that the succeeding crops of alfalfa are produced from the crown shoots which put out from the crown at approximately the time of the ap-

pearance of first bloom. If the crop is allowed to stand on the land until full bloom these sprouts which are to produce the next crop are dwarfed more or less and take some time for recovery after the crop is harvested. The time taken results in a shortening of the annual yield. Thus it is possible by cutting the crop when the crown shoots first appear to obtain a heavier annual yield of hay and feeding value than to wait until a little later when the specific crop is at its maximum.

The time then to cut alfalfa hay is when the crown shoots for the succeeding crop first make their appearance whether the present crop is in bloom are not. The only modification to make on this rule is to get a crop which is exactly fitted for some type of feeding. If for feeding horses that are to be on the road to some extent the hay should be allowed to get somewhat riper; but for all other feeding, the above time of cutting is preferable.—Alvin Keyser, Colorado Agricultural College.

"There is no living without women, and to be assigned to one of them and have her contrive that there shall be no living with her makes a serious dilemma."

Most family trees bear more or less nuts.

General Agriculture



GALLIPOLI SIMILAR TO CALIFORNIA

Dr. A. Davidson, always interested in California botanically, sends us a clipping from the Scotsman of July 17 which contains a part of a letter from a soldier in the trenches at the Dardanelles. It has reference which may be of interest to Californians for the writer makes comparison of plants there with those in California:

"Mr. A. Stevenson, printer, Maybole, has received the following letter from his son James, who is a member of the Royal Scots Fusiliers at the Dardanelles:—

"We are standing by just now waiting on the word to move to the firing line, perhaps, and I am taking the chance to write when I have it, as it may not come for some time again. My desk is the back of a shovel and my room part of the rearmost trench. The bullets are whizzing overhead from the front, and our own shells going high over us from the rear. We are all right so long as we keep our heads down, and you may be sure we do so when there is no need to look over the parapet.

"We have had a tremendous time since we left the firing line eight days ago—digging trenches, etc. It's no place for a lazy man, I can tell you. There is a heavy bombardment going on just now, and I would rather be here than in the enemy's trenches. No wonder there is such a call for munitions, when the big guns fire the way they are doing.

"The vegetation here is something similar to my old stamping ground in California, and our present ground is something like foothills. There are lots of sage brush, Johnson grass, Bermuda grass, and fox tails, one or two small family orchards of about a quarter of an acre, and I have seen an odd apricot, persimmon, almond, fig, and quince. I have also heard of some orange trees. The trees are not cultivated the way they are in California, but are just let grow. The well tops and water troughs seem to be hewn out of solid blocks of stone, and the houses built of soft stone of the countryside with mud for plaster.

"There is a lot of water near the surface, and some of it is very good and nice and cold. The fruit is not so far forward as in California, the grapes just now being only half the size of peas.

"Just heard some good news from

the firing line—reported the right has taken two trenches 800 yards apart. Hope it is true. Enjoyed a good dinner today, and am feeling fine just now. Here we get a little dry tea and sugar and make it ourselves. So had a tin of meat and vegetable ration

"Every Day is Bargain Day" to the Man who Buys BUILDING MATERIAL from WHITING MEAD'S Big CATALOG! 1915 Edition is FREE to you—Saves 20% to 40%

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—A typical value from our Sash and Door Dept., finest quality veneered oak doors with plate glass panels at top. Secured by special purchases recently and not mentioned in our catalog. All standard sizes and styles. Write for further details.

Screen Doors 25% Off

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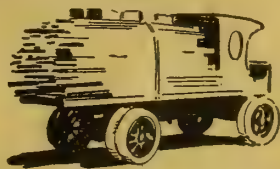
—This door usually sells for \$1.65. Made of clear sugar pine and fitted with black screen wire, like picture, at our price..... \$1.25

Style No. 9, \$1.40

—Made of sugar pine, with three lower panels and fitted with galvanized screen wire. A door that will stand \$1.40 lots of use; our price.....

Odd Doors \$1 and \$1.25

—Inside doors of best sugar pine, 5 panel Colonial and 5 panel O. G., styles a big lot of them, in all sizes.



Oregon Pine \$10 to \$15

—Good new rough Oregon Pine lumber, all sizes, at \$10 to \$15 per thousand.

—Oregon Pine lath, 4 ft., new, \$2.50 per thousand.

—Best grade Slashed Grain Oregon Pine, sanded finish, \$37.50 per thousand. This makes a beautiful interior finish.

—These prices will give you an idea of how our lumber department can save you money. Send in your lists and let us give you our price delivered.

Paints \$1.50 Gal.

—You can buy paints cheaper from us than any other dealer in the West. We buy in large quantities an dsell for the lowest prices.

—Standard House and Floor Paints, \$1.50 per gal.

—Standard makes of varnishes at 25% off regular prices.

—Everything in Paints, Wall Tints, Brushes, etc., at big savings to you.

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Black Graphite Roof 50¢

—per gal. 85¢

Standard Roof Paints—red, green, gray—per gal. 85¢

Shingle Stain, made from pure ground colors 50¢

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—A splendid quality of roofing paper that most firms would sell 20 to 40 per cent higher. Each roll complete with necessary cement, nails, etc., ready to lay.

1-ply, double-sanded, per roll of 108 square feet..... \$1.15

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—Send for free sample. Remember we ship direct to you.

SHOVELS!—At Wholesale Cost—SHOVELS!

—You may go a life time before you get such an opportunity again. These shovels are in A-1 order but have been slightly smoked by means of a fire while in transit.

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Long Handle, Square Point Shovels, per doz. \$4.85 or 50¢ each

D Handle, Round Point Shovels, per doz. \$4.15 or 50¢ each

D Handle, Square Point Shovels, per doz. \$4.15 or 50¢ each

Long Handle Spades, per dozen..... \$3.75 or 40¢ each

D Handle Spades, per dozen..... \$3.75 or 40¢ each

Long Handle Scoops, per dozen..... \$3.75 or 40¢ each

D Handle Scoops, per dozen..... \$3.50 or 40¢ each

Dana Freezers at Half

—A big lot of Dana freezers. Send in your order today. We've sold hundreds of them at these prices and have yet to hear a single complaint.

3-quart size, regular \$2.25, now..... \$1.00

4-quart size, regular \$2.50, now..... \$1.25

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—The highest grade wallboard on the market; made of 3 layers of moisture-proof fibre, with asphaltum between each layer; or cream white fiber board.

—Cheaper and neater than plaster or lumber, and anyone can install it in one-quarter of the time. Per 1000 square feet..... \$19.00

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Outside is finished in a rich sky blue enamel with bronze trimmings and hardwood edge. Priced only \$8.

—Other larger sizes at \$8.50, \$9 and \$10.

Low Down Enamel Steel \$11.50

Toilet Combination..... \$11.50

Complete to floor—wonderful value.

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Closet Combination..... \$15.50

Special value—worth \$22.50.

Big value in High Tank \$10.00

Toilet Combinations..... \$10.00

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Special Bankrupt Stock of Kitchen Sinks.

All sizes—up from..... \$1.00

Best Quality Porcelain Lavatories, every one guaranteed—\$10 down to..... \$3.75

—\$10 down to..... \$3.75

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Agriculture

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

SILOS

We believe dairymen will find valuable hints in Mr. Guilford's article on dairy and live stock page of this issue. Whether hay is high or hay is low we believe the silo affords one of the cheapest and most satisfactory methods of storing feeds. Next week's article by Mr. Guilford will continue the same discussion.

AT BERKELEY

The agricultural college of our state university has called all of its instructors and members of experiment station staffs and farm advisers to meet in Berkeley this week. This will bring all those interested in agricultural education and investigation together. Such conferences must result in good to the agriculture of the state.

POULTRY FOR PROFIT

It has been some time since we referred to one of the best books yet printed on the Pacific Coast. It is "Poultry for Profit," a practical manual for beginners, farmers and side line poultrymen. It is by Mrs. Koethen who writes nearly every week for Cultivator readers. Mrs. Koethen's book gives hints secured from actual experience and not from theory. The poultry business now calls for a little shrewder management than ever before and this book is one of the most helpful to that end.

AMERICAN POMOLOGICAL

A little more than a week later the American Pomological Society will convene in Berkeley. As we go to press the delegates are entering the state by the way of Southern California. The first of next week will be spent at the Panama-California Expo-

sition at San Diego. Three days will be given to visiting the orchards in the vicinity of Riverside and Los Angeles. After the sessions in Berkeley some days will be devoted to the horticultural exhibits made at the Panama-Pacific Exposition at San Francisco.

RAISINS TO EUROPE

The raisin growers are pleased at the receipts of a 3,000 ton order for raisins to be shipped at once to England. This is by far the largest order ever received by California shippers of raisins for export. The manager of the Associated Company says there is indication that other orders will soon be received. This is secured largely because of the shutting off of Mediterranean ports by war activities, but it is possible this giving of a chance to California raisins to show their quality may lead to more general acquaintance.

VALUABLE REPORT

The proceedings of the 45th State Fruit Growers' Convention, or the convention which was held in Los Angeles in November, 1914, is a most valuable book of nearly 400 pages. It is being mailed by State Commissioner Cook to all who registered at the convention, also to anyone who writes requesting it. Those of the Cultivator friends who live near Los Angeles may secure a copy by applying at this office. It contains all of the addresses made at that convention and a very complete report of proceedings which were taken during the convention by shorthand reporters. In addition to the text there are a large number of halftone illustrations.

STATE COMMISSIONER

In our report of the state convention of county horticultural commissioners held at Palo Alto we referred to the fact that certain San Francisco papers had circulated a report that the county commissioners in executive session passed resolutions favoring a successor to Dr. Cook as state horticultural commissioner, and that the commissioners stated there was absolutely no discussion on that subject. Since then the president of the state association, Wm. Wood, has written those who were in attendance at Palo Alto, asking them for a statement as to such matters being discussed in any sessions held by the horticultural commissioners. Twenty-five have already responded to this request and have stated positively that no such action was taken.

SHORT COURSES

Another week we will have more extended announcement of the short courses which will be held this fall at the university farm at Davis, but we may be permitted here to call attention to the fact that there is scarcely any activity agriculturally but may be helped by these courses. All kinds of horticultural subjects are treated. The poultryman, the live stock man, especially the dairyman, may find most valuable instruction in these few weeks of lectures. There is many a farmer in California who is finding that his calling demands more and more as the years go by, and more scientific methods must be employed to meet competition. To give this information the short courses have been instituted, and every farmer in the state should at least write to Dean Thomas F. Hunt for information regarding them.

BEAUTIFYING THE STATE

It has been predicted that one result of the holding of the two great expositions in this state will be the beautification of our cities and rural communities. It seems that it would be impossible for the people of this state to visit—as they generally will—these expositions and not go home with a desire to add more beauty to their homes. It has been said that the great buildings and the immense expenditures required in their construction are so beyond the reach of most of us that they cannot have any great influence on our homes, yet the desire for more beauty may be gratified with little money. If one geranium is planted or if one tree is allowed to stand to add to the beauty of the landscape because of the influence of these expositions our state will be the richer.

An Eastern expert in referring to the value of the expositions says that they will be far-reaching in demonstration of the "actual commercial value of artistic assets." He declares the Expositions really city-planning expositions of the first order and urges application of the great principles displayed there in the development of every city and town in California. He predicts that they "will start an avalanche of improvements along artistic lines, which will be given increasing momentum by the development of long periods of prosperity."

PLANT BREEDER

The Iowa state college of agriculture has just bestowed special certificates for eminent services to agriculture upon Ex-Governor Hoard for his work in dairying and upon Hon. Chas. G. Patten, an Iowa plant breeder. Mr. Patten's work has perhaps made him as well known in Iowa and the Middle West as is ex-governor Hoard, for he is the producer of several varieties of plants which have done exceptionally well in that section, and it is fitting that honor be given to him because of his work and in such a way that the rest of us may know of it. The work of breeding and improving our plants has been engaged in by plant breeders the country over. At one time it was asserted that one who had power over these plants to produce a better and a bigger and a more profitable fruit was nothing less than a wizard. However, we are arriving at the stage of recognizing that it is merely applying the laws of nature in such a way as to give to the human race the better product. It does require close application and wonderful patience, and men of Mr. Patten's type who have spent a lifetime in producing better types should be honored.

Referring to Mr. Patten's work the Iowa university says: "In advance of the experiment stations of the country, on his farm near Charles City, he developed both by selection and by cross breeding new varieties of apples particularly adapted to the upper Mississippi valley. A practical plant breeder, without outside aid or funds and with only his own labor on 20 acres of land on his farm, Charles G. Patten led in horticultural study and experiment. He has contributed largely to horticultural literature, and his best apple, Patten Greening, is grown widely throughout the north Mississippi states."

A farmers' club in Wisconsin has adopted the motto "Get acquainted with your neighbor. You may like him." Not so worse for California farmers' club members.

Agricultural Notes

The Irish wheat crop covers 87,116 acres this year, against 36,913 acres last season.

A Connecticut corporation is building a large cold storage warehouse to store eggs in Shanghai, China.

Portugal will have to import 200,000 tons of wheat to supply the deficiency in her home harvest. The country usually produces a surplus.

The Austrian-Hungarian minister of agriculture and industry has issued a decree that the import of molasses into Austria will be free of duties.

The Argentine government is conducting an active campaign to extend rice farming. Approximately 12,000 acres in Argentina are now used for that purpose.

American quail, or "bob whites," have appeared in British Columbia this season for the first time. Previous efforts to introduce them into the Canadian country have been unsuccessful.

One thousand cans of tomatoes can be put up at home at a cost of \$26.05, according to a letter sent out by the Arkansas bureau of agriculture, pointing to cotton growers the way out of hard times.

The department of agriculture announces that Stuben County, New York, has been placed under quarantine on account of the discovery of foot and mouth disease in a herd of cattle near Hornell in that county.

The National Dairy Show will not be held this year. The management pledges itself to a greater show October 26 to November 4. The decision to postpone the show is due to caution lest the foot and mouth disease be not entirely stamped out.

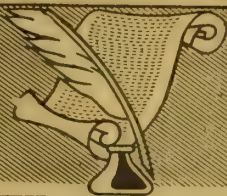
No small portion of the hogs in Eastern packing houses are raised by the children of the small orchardists and ranchers in various portions of the country. The pig clubs and other inducements to the children to handle a little business of their own are resulting in much good to small farmers.

"De Java Bode" says that the war has brought an entire change in the sales markets of the Java sugar. Before the war most of the Java sugar was sold in the Orient (Japan, China and Australia). Since the outbreak of the European war, England has become the larger buyer of the Java sugar. Of the 1914 harvest she has taken 37 per cent.

All indications at present are that the 1915 peach crop of the United States will be the largest in the history of the country. Many of the larger producing areas will have substantially increased yields, in some of which there was a dearth last year, while in the entire country there is only one district—that of Colorado—in which the crop is noticeably shorter than in 1914.

Five thousand Ontario, Canada, fruit growers this season are cooperating with retail merchants. These fruit growers got together and subscribed jointly to a campaign of advertising, the object of which was simply to urge consumers to see their fruit dealer and have him make provision for them by securing fruit in advance. This plan has worked so successfully that consumers all over Canada are today able to secure plentiful supplies of all fruits, and the retailer has increased his business, his fruit in many instances being sold in advance of its arrival at his store.

Agricultural News Notes



of the Pacific Coast

Northern California

Hop growers are sending out notice that no more pickers can be used in the yards at Wheatland.

The Mendocino Hop Growers' Association has fixed the price for hop picking at \$1.00 per 100 pounds.

Farmers' short courses at the university farm at Davis will open October 4, continuing till November 12.

The next meeting of the Humboldt County Dairymen's Association will be held at Ferndale on Tuesday, September 7.

A petition will be presented to the Lake County board of supervisors for the formation of a drainage district in Scott's Valley.

A dairy barn 208 feet long, 60 feet wide and 26 feet at the peak has just been completed for H. R. Timm of Dixon, Solano County.

County Horticultural Commissioner Harney of Yuba County estimates that the rice crop of that county this year will have a gross value of \$240,000.

Anderson, Shasta County, has disposed of the last of its berry crop, and packing houses are now working to capacity on peaches, pears and prunes.

A variety of Japanese bamboo being tested out at the government plant introduction gardens at Chico has an official record of 18 inches' growth in 24 hours.

County supervisors of Butte County will not force the clean-up of weeds at this time, but the weed survey will be continued so that all will be ready for a campaign in the spring.

The California State Beekeepers, in convention at Civic Auditorium, San Francisco, last week, passed a resolution requesting the state university to establish a chair of apiculture.

The California Growers' Association is planning to establish a cannery to care for the fruit of Sutter and Yuba Counties. This cooperative association now has canning plants at Tulare, Kingsburg and Woodlake.

State Veterinarian Keane has issued a call to Mendocino County sheep growers to meet him at Cloverdale to discuss drastic action to prevent spread of sheep scabies which is becoming serious in that county.

Work of examining lands over the county for yellow star thistle is being actively pushed by Horticultural Commissioner Mills of Butte County. Twenty field men are at work, each in an especially assigned district.

The chamber of commerce of Oroville, Butte County, has received so many letters of commendation and appreciation of the flower distribution on overland trains at Oroville that it has decided to continue this custom.

A storm drainage campaign is being developed by the Glenn County farm bureau. In this undertaking the various needs in each farm center are being shown on base maps, the idea being that the farmers themselves, in cooperation with irrigation companies and the county board of supervisors, shall make a concerted effort to relieve surface water floods which menace portions of the farming area during the early spring months each year.

Central California

There will be a Holstein Friesian breeders' sale at Hanford, October 14.

Farmers' short courses begin at the university farm at Davis October 4, ending November 12.

There has been a decided decline in prices of Turlock cantaloupes the last week owing to the large amount being shipped.

George F. Miles, an expert of the United States department of agriculture, is in Visalia investigating the beet sugar industry.

The heavy crop of sugar beets in the district tributary to the Visalia factory promises to keep it running until well into October.

Charges have been made that some Fresno grape shippers sent out unripe Malagas just before the standardization law went into effect.

The California Associated Raisin Company, during the last week of August, sold nearly 3000 tons of raisins for export to Europe. Most of them went to England.

The International Irrigation Congress will hold sessions in Stockton, September 13-14; Fresno, September 15-16; Sacramento, September 17-18, and San Francisco, September 20.

Accurate information as to water development possibilities of the Stanislaus watershed is to be secured by the irrigation districts working in cooperation with the federal government.

County Horticultural Commissioner Collins of Tulare County has asked the board of supervisors for an assistant inspector as it is impossible for him to do the work properly alone.

Vernon Campbell, manager of the California Growers' Association, on last Saturday addressed deciduous fruit farmers at Hemet, Riverside County, as to the advisability of establishing a cannery.

The management of the Fresno District Fair is making premium lists. The fair is to be held September 28 to October 2. Those interested may write Secretary C. G. Eberhart, Chamber of Commerce Building, Fresno.

Inspectors who are enforcing the new fruit standardization law in Fresno say they are meeting general cooperation among the packers. At present the inspectors are making daily trips to the different packing houses.

The Tulare Fruit Growers' Association has organized with the following directors: H. L. Eggleston, J. W. Railbey, G. C. Dorman, F. P. Storm, Andrew Benson, A. R. Goodman, G. W. Goodman, J. W. Dunlap, J. H. Cochran, F. H. Stiles and Vernon Campbell.

Inspectors appointed by Horticultural Commissioner Collins of Tulare County are: W. A. Bates, M. A. Harper, George W. Harper and George W. Martin of Dinuba; W. J. Cairns at North Dinuba; C. B. Earhart and R. D. Dedhirst at Sultana; W. M. Beinhorn at Cutler; A. Fraser at Smyrna; L. A. Campbell at Seville, and W. A. Magatagan at Giffen.

Southern California

Beaumont, Riverside County, now has a fruit cannery.

Paso Robles, San Luis Obispo County, expects to ship 70 tons of walnuts.

Walnut buyers are reported to be offering 12½ and 14 cents, orchard run, for walnuts.

Ventura County's second annual fair will be held at Seaside Park, Ventura County, August 26-28.

Lemons have advanced about 25 cents a box and growers are feeling correspondingly relieved.

W. E. Packard, in charge of the experiment station at Meloland, is holding demonstrations of a new hopper-dozer.

The Anaheim Citrus Association has closed down for about a month, having shipped to date 360 carloads of oranges.

The horticultural commission of Riverside County is notifying owners of land infested with Russian thistle to remove it.

The California Vegetable Union is about to begin construction of a large packing house at Garden Grove in Orange County.

The La Habra Citrus Association has already shipped 140 cars of Valencias. It is now holding off shipments for the September market.

The first fine imposed this season for leaving a camp fire burning in the woods was imposed against a Pasadena man. The fine was \$50.

David Darling, a rancher of the Palo Verde Valley, has harvested 120 ninety-pound sacks of Tepary beans from a little less than seven acres.

Manager Renfro of the National Orange Show to be held at San Bernardino February 17-24 proposes a southland garden effect as a general decorative scheme, vine clad pergolas to be used extensively.

The packing house of the Santa Ana Valley Walnut Growers' Association at Santa Ana is being thoroughly overhauled in preparation for the new crop. The capacity of the plant is increased from 30 to 40 tons daily.

Riverside will hold its district fair for five days, October 5-9. The Hemet fair will be held October 12-16. Orange County has not yet decided whether her fair will be held September 28 to October 2, or October 19 to 23.

Hemet and San Jacinto Valley fruit growers met at Hemet Saturday, August 14, to listen to an address by Manager Vernon Campbell of the California Growers' Association on cooperating in processing and marketing of fruit. There is a movement of growers of the valley to establish a cooperative cannery.

A company subsidiary to the California Fruit Growers' Exchange has selected Corona, in Riverside County, as the site of a factory for the manufacture of citrate of lime, lemon oil, lemon emulsion and other by-products. The new company is capitalized at \$100,000 and its shareholders are all lemon growers.

The Coast

A sugar factory is now assured for Salt Lake County, Utah.

The Northwest Live Stock Show will be held at Lewiston, Idaho, November 29-December 4.

A severe hail storm in Douglas County, Washington, destroyed wheat in a strip two by 12 miles.

The University of Idaho has compiled a directory of breeders of pure bred live stock within the state.

The sugar factory at Logan, Utah, is harvesting its seed crop, which it is estimated will amount to 21 carloads.

The fifth annual Columbia River Grape Carnival will be held at Kennewick, Washington, September 12, 13, 14.

The Alfalfa Seed Growers' Association of Yuma Valley, Arizona, will sell from three to four carloads of seed this year.

Eastern Oregon streams are reported at their lowest in 20 years, giving rise to many disputes between water users.

Kennewick, Washington, farmers are taking advantage of the new Celilo Canal to ship their hogs down the river to Portland.

The state fair association of Utah is discussing the advisability of abolishing admission fees and having an absolutely free state fair.

A carload of fancy sheep will be sent by the Gallatin Valley Sheep Breeders' Association of Montana to a half dozen of the county fairs.

Agriculturists of the University of Utah are conducting a farm survey in the irrigated sections of Salt Lake, Weber and Box Elder Counties.

The experiment station staff of Utah state college is preparing an exhibit for the Dry Farming Congress, which will be held at Denver, September 27 to October 9.

County poultry associations of Montana have decided to join in sending a carload of prize-winning poultry to enter the show at the Panama-Pacific exposition.

The North Pacific Fruit Distributors reports several inquiries for large carload lots of apples and states that the market prospect generally is vastly ahead of last season's.

Sheep men expect that feeding lambs will bring record prices this fall. Many have already been contracted at prices ranging from \$5.75 to \$6.50 per hundred weight.

The American Shorthorn Breeders' Association is offering a number of prizes for cattle of that breed at the Cascade International Stock Show to be held at Spokane, September 13-18.

Richland Valley, Washington, will hold its festival September 9 and 10. Exhibits from this festival will be displayed also at the Columbia River Valley Grape Carnival at Kennewick, September 13-15.

A big order has been received by Wenatchee shippers for 300,000 boxes of standard apples. Most of this shipment is intended for the Australian and South Africa markets and includes 30 varieties.

Order Now

Your Ideal Green Feed Silo

You will never make the profit you ought to from your cows until you feed them silage.

Corn makes the best silage, but any good forage crop will make good silage providing you have a good air and water-tight silo.

If you have any growing crop suitable for silage, now is the time to order your Ideal Green Feed Silo and get it up in plenty of time to fill.



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Everything for the Dairy

DE LAVAL DAIRY SUPPLY CO.
San Francisco Seattle

Live Stock and Dairy



SILOS IN CALIFORNIA

Written for California Cultivator
By W. S. Guilford



SILOS are not new in California, and in the eastern states and in parts of Europe the use of silage is a practice many years old.

The history of silo building has been that the building of a few isolated silos does not always lead immediately to a general silo building movement, but gradually the great value of silage as feed becomes more and more apparent to the neighbors, and all at once silos spring up by the dozen.

In one district in northern Illinois

had been enough to last until silage time again.

At the J. L. Gibson ranch at Williams silage was made from sorghum last year. It yielded at the rate of about 25 tons per acre. This year Indian corn is being grown to fill the two DeLaval silos.

At the Morris ranch at Woodland they have silos made of two by four studding and half inch resaw redwood lumber. There are also two of these at the Butte City Berkshire ranch at Butte City in Glenn County.

For these resaw silos studding are set upright about 14 inches apart, then redwood boards six or eight inches wide and one half inch in thickness



TWO DE LAVAL SILOS, J. L. GIBSON CO. RANCH, WILLIAMS

there were no silos ten years ago. Now they are on almost every farm, and the building of one on a farm frequently leads to the building of two or more.

There is this same situation in some parts of California now; one or two silos have been built, and many, many more are as sure to come as taxes.

All kinds of silos are satisfactory if they are properly built and cared for, but the stave silo is largely responsible for the great popularity of the silo in America today because it has proven satisfactory under a wide range of conditions at a very modest cost.

There is a great advantage in community building of silos, for this makes community ownership of silo filling machinery and changing work at filling time possible.

The acreage in corn in California is increasing very rapidly, particularly in the Sacramento Valley. All kinds of corn are being grown and all sorts have been found to be satisfactory for making silage.

Last season Alva Slocum at Willows put milo, Egyptian corn, feterita and some other crops in a DeLaval Green Mountain silo, and I have never seen richer or better feed come out of a silo. He planted these varieties of feed on land that had already raised a big crop of alfalfa hay during the early summer, the ground being checked and levelled for irrigation and an abundance of irrigation water available from the Sacramento Valley Irrigation Company canals.

He fed the last of the silage out some time in June, and both Mr. Slocum and the cattle wish that there

are bent around on the inside to make a continuous lining. This is covered with tar or roofing paper to make an air tight layer, and a second layer of half inch redwood is placed inside that. At the Butte City ranch there is an additional layer of half inch pine put on the outside to make a protection for the inner layers of redwood.

As will be noted in the illustrations, one of these is covered with resaw pine eight inches in width and put on horizontally—the other was covered with resaw pine twelve inches wide put on at an angle. There was a small saving in the labor cost in putting on the latter.

Silage is used more for dairy cattle than any other class of stock, although thousands of tons are now being fed to fattening cattle and sheep all over the United States and Canada. It is also fed to hogs for succulence and roughage where no cheaper feeds are available. There are several farms in California where it is being used in this way.

The silo will be found particularly valuable on the medium and small sized intensely cultivated, irrigated farms that are being established all over the state. On these farms it is necessary to make the greatest possible return per acre and feed of all kinds must be made into as many dollars' worth of high class products as possible. Animal manures will be used on the corn land to make the largest possible per acre yield of silage material, and the silo will keep it in the most palatable form for milk and meat production.

Indian corn is cut for silage until after the kernels in the ears have



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passed through the dough stage. If there is a large field and the corn is drying rapidly, the cutting may be started shortly before the corn reaches this stage, and if it gets too ripe water can be run into the silo and a good product will result. The stream from a three quarter inch hose is frequently run into the cutter during filling time when the fodder is somewhat dry.

Corn is cut either by hand with a corn knife or with a corn binder and hauled in with low wheeled wagons.

It is very important that the corn be thoroughly tramped as it goes into the silo so as to fill up any air spaces—

DETERMINING FEEDING VALUES
Written for California Cultivator
By F. B. Morrison

Continuing the discussion of feed values determination, Mr. F. B. Morrison, co-author with Prof. W. A. Henry of "Feeds and Feeding," comments as follows:

YOUR letter has been referred to me by Professor Henry, but I find that I mislaid it and it thus did not receive immediate attention. For the past two years I have been spending all my spare time working on a complete revision of 'Feeds and Feeding,' as co-author with Professor

stations and by the United States Department of Agriculture. We have undertaken this stupendous task at our own expense because we felt that the data contained in Farmer's Bulletin 22, and upon which the appendix tables in the present 'Feeds and Feeding' are chiefly based, were far too extensive, as this table was originally gotten out

originally published in Farmer's Bulletin 22.
"You may be interested in the figures for dent corn, wheat, bran, and dried beet pulp which will appear in the new edition of 'Feeds and Feeding,' and I am adding the number of analyses upon which these figures are based.

	Dry matter	Crude matter	Carbo-hydrates	Fat	Total digestible nutrients
Dent corn	89.5	7.5	67.8	4.6	85.6
Wheat bran	89.9	12.5	41.6	3.0	60.8
Beet pulp, dried.....	91.8	4.6	65.2	0.8	71.6

in 1895. The United States Department of Agriculture has two or three times begun the task of bringing this compilation down to date but has given it up on account of the time and expense involved. We are now just completing the work, which has involved going through all the bulletins of the state experiment stations and the United States Department of Agriculture and represents the work of one person working full time for practically three years. In these compilations we have not only recorded the composition of the feeds but have also made a complete compilation of the digestion coefficients, such as are given in Table II., and of the fertilizing constituents, such as are given in Table III.

"Your correspondent asks which is the most correct standard, the present edition of 'Feeds and Feeding' or Farmer's Bulletin No. 22. I would state that in most cases the present 'Feeds and Feeding' figures are based chiefly upon Farmer's Bulletin 22, but were corrected more or less in view of more recent data. They are, therefore, more accurate than the figures

"The average for dent corn is now based upon 440 analyses instead of 86; for wheat bran 7742 analyses instead of 88; for dried beet pulp upon 48 analyses instead of 7 as in the present edition of 'Feeds and Feeding.' You will thus see that the new figures are immeasurably more accurate than the old ones. In the column 'Total digestible nutrients' we give the sum of the protein, the carbohydrates and the fat X 2.25. You will note that dent corn is considerably higher in total digestible nutrients than dried beet pulp, and dried beet pulp is considerably higher than wheat bran.

"Your correspondent asks which is the best guide in determining the food value of a concentrate, the percentage of digestible nutrients or the experiments carried out at the different stations. I would state that where the feeding trials have been conducted with a sufficient number of animals and repeated so that the results are reliable, the results of feeding trials are far more important. It is for this reason that we summarize the results secured at the various stations in Part III. of 'Feeds and Feeding.' So



TWO RESAW SILOS AT BUTTE CITY RANCH

for air makes mouldy silage.

Corn is cut into pieces one half inch to one inch long.

A great deal of alfalfa is made into silage in California, particularly when it is very weedy.

The time is not far off when silos will be as familiar sights in our fertile valleys as they are in the Mississippi Valley now.

Henry, and we are just now getting the last of the manuscript in shape for the printer.

"For the new edition of 'Feeds and Feeding' we have made a complete compilation of all the analyses of American feeding stuffs which have been made at the various experiment

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About 50 large record cows in sale with records as high as 31 lbs., including a 28-lb., 3-year-old, a 28-lb. daughter of Johanna McKinley Segis, a 25-lb. daughter of Aaggie Cornucopia Johanna Lad, and many with great yearly records.

Daughters of Great Record Cows

About 100 heifers, nearly all from great record cows with records as high as 33 lbs. butter in 7 days and 1000 lbs. butter in 1 year.

Daughters of Great Bulls

More daughters of great sires than any sale in the West, including 10 of the best daughters of Morris' senior herd sire, King Segis Pontiac Emperor—10 daughters of Lorena Korndyke, the great show bull—20 daughters of King Pontiac Topsy, one of the best sons of King of the Pontiacs—5 daughters of DeKol Hengerveld Burke, sire of two, 30-lb. daughters—daughters of Johanna McKinley Segis, the \$25,000 sire, and other great sires.

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The females of breeding age are bred to the greatest bulls in the West, including the son of Tillie Alcartra, a son of Riverside Sadie DeKol Burke, a son of Aralla De Kol, a son of King of the Pontiacs. Consider that many cows and heifers are in calf to sons of cows that hold every world's milk record from 7 days to 3 years.

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At public sale in the United States will be sold—including King Segis Pontiac Emperor, senior herd sire of A. W. Morris & Sons—Lorena Korndyke, the great show bull—2 sons of cows with records of over 1000 lbs. butter in 1 year, including DeKol of Valley Mead 2d, who holds breed record for production as a 3- and 4-year-old—and a number of other bulls from high yearly record dams, sired by sons of world's champions. Also a number of lesser merit out of large record cows.

King Segis Pontiac Emperor in respect to both breeding and individuality is unquestionably the greatest bull ever offered at public sale anywhere.

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The splendid list of offerings this year includes about 25 Advanced Registry cows with records as high as 29.90 lbs. butter in 7 days as a 4-year-old (highest record 4-year-old ever sold in public auction in the West), including a 24-lb. 3-year-old.

About 30 daughters of Advanced Registry cows with records as high as 30 lbs. butter, including 2 daughters of the 29-lb., 4-year-old daughter of the 24-lb. 3-year-old; daughters of a 22-lb. cow.

A Noteworthy Feature

Will be 15 daughters of Dutchland Sir Pontiac Rag Apple, son of Colantha Johanna Lad and Aaggie Cornucopia Pauline 3d., out of cows with records as high as 30 lbs. This is the greatest bred son of the famous son of the former world's milk and butter champion.

Also daughters and grand-daughters of such great sires as King of the Pontiacs, 164 A.R.O. daughters, Homestead Girl DeKol Sarcastic Lad, 104 A.R.O. daughters, Juliana King of Riverside, whose daughters average 800 lbs. butter for yearly production—Johanna Rue Sarcastic Lad, half brother to the new world's champion, Lorena Korndyke, Pontiac Hengerveld Parthenia, sire of world's champion sr. 4-year-old, King Segis Pontiac Emperor.

What Will Their Calves Be Worth?

Sired by a son of Till Alcartra, world's champion milk cow—a son of a 36-lb. cow—a son of Juliana DeKol, former world's record 2-year-old—brothers to the world's champion sr. 3 and sr. 4-year-old—son of a cow with a record of 870 lbs. butter in 1 year, and other bulls of equal merit. Answer—They will be worth all their dams bring.

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Including King Segis Pontiac Emperor 3d—son of K. S. P. Emperor, out of a cow with a record of 870 lbs. butter in one year—Sir Holland Gamp, a great show bull—Sir Riverside Tommy out of a cow with a record of 772 lbs. butter in one year, and a grandson of King of the Pontiacs out of a 28-lb. daughter of Johanna McKinley Segis.

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important do we believe these trials to be that in working on the forthcoming 'Feeds and Feeding' we have not only gone over all the published data from the various stations, but have secured the results of unpublished trials from a majority of the stations in the United States.

"You will understand that when but a single trial has been conducted in which two different feeds are compared, even if a fair number of animals were included in each lot, we cannot be too sure that the results would not be materially different if the trial was repeated, on account of the experimental error involved. For this reason, wherever possible we are averaging together the results of all the trials which bear on a given point, for thus only can the most reliable results be secured.

"In regard to the relative value of beet pulp and wheat bran I would state that these feeds should not in a way be compared, for dried beet pulp is a carbohydrate-rich feed, low in protein, while wheat bran is used as a protein concentrate. You will see that they really fulfill different functions in the ration. When fed with other feeds low in protein, wheat bran should have a far greater value than dried beet pulp. On the other hand if fed with alfalfa hay, the value of dried beet pulp would undoubtedly be higher than that of wheat bran. In the new edition we will give the results of a trial by Lindsey at the Massachusetts station (Massachusetts Report 1913, Part I, pp. 129-140), in which he found 4.3 pounds of dried beet pulp equal to the same weight of corn meal when fed to dairy cows with a basal ration of 2.0 pounds wheat bran, 0.7 pounds cottonseed meal and 17 pounds mixed hay. This you will see agrees with the results secured in fattening sheep, as given on page 466 of the present 'Feeds and Feeding', where dried beet pulp was equal to the same amount of corn. From these trials I would conclude that when fed as part of the concentrate mixture dried beet pulp could replace corn pound for pound.

"As you will find on page 120, Armsby rates dried beet pulp at a net energy value of 60.10 therms per 100 pounds, while he gives corn the value of 88.84 therms. These figures are in most cases only computations and not determined by direct experiment. However, from the composition and character of beet pulp I would conclude that if fed as a sole concentrate allowance to dairy cows or fattening animals, it would not quite replace corn pound for pound.

"I have found no data concerning the relative value of steam-dried and fire-dried beet pulp.

"You will probably be interested in learning that the new edition of 'Feeds and Feeding' will be out about the first of October."

MILK FEVER

Came near losing my cow when fresh on account of milk fever. Is it safe to breed her again?—Subscriber, Alhambra.

The more valuable the cow the more liable to milk fever. We would surely breed this cow again and would take care that there is no recurrence of the disease. It is a disease which is far easier to prevent than to cure. The first treatment is to dilute the blood and overcome one cause of the disease, which is constipation. Laxative foods such as oilcake meal and even doses of epsom salts are recommended one to three days preceding the calving period. There should be exercise in the open air and the cow should be protected from extreme heat. The disease never occurs with young stock with first calf. The older and more productive the cow the greater liability to this trouble. In other words, the cow has ceased her growing and all the powers are given to producing a large flow of milk.

"Among the most efficient preventives may be named a spare diet (amounting to actual starvation in very plethoric, heavy-milking cows) for a week before calving and at least four days after. A free access to salt and water is most important as the salt induces drinking and the water serves to dilute the rich and dense blood. Iced water, however, is undesirable, as a chill may bring on fever. A dose of Epsom salts (1 to 2 pounds) should be given 12 to 24 hours before calving is due, so that it may operate at or just before that time. In case calving has occurred unexpectedly in the heavy milker, lose no time in giving the purgative thereafter. A most important precaution in the fleshy, plethoric cow, or in one that has been attacked at a previous calving, is to avoid drawing any milk from the bag for 12 to 24 hours after calving. Breeders on the Island of Jersey have found that this alone has almost abolished the mortality from milk fever. If Epsom salts is not at hand use salt-peter (one ounce) for several days. Daily exercise is also of importance, and, excepting in midsummer when the heat of the sun may be injurious, the value of the open air is unquestionable. Even in summer an open shed or shady grove is incomparably better than a close, stuffy stall. A rich pasture (clover especially) in late May, June or July, when at its best, is to be carefully avoided. Better keep the cow indoors on dry straw with plenty of salt and water than to have access to such pastures."

The above from Diseases of Cattle, United States Department of Agriculture, does not refer to the air pump remedy which is often most successful. This consists of a common bicycle pump or a pump which is provided for the purpose applied to the teats in such a way that the udder is greatly distended.



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Paralysis

What is the matter with my hogs? They seem to be perfectly well but in a few hours will lose the use of their hind quarters but retain their appetite. They are fed sweet skim milk and run on alfalfa pasture. They are given fresh water once a day. It seems to affect young hogs five or six months old most. Would like to know remedy.—Subscriber, Tulare.

Cases of paralysis of the hind quarters of hogs are not common among those that have fields to run in. Until we can get more information on the subject be sure that they have plenty of fresh water and add to the feed of

each hog a tablespoon once a day of the following: Salicylate of soda two ounces and tincture of juniper berries one pint. Mix and give as directed above.

Difficult Breathing

When our cow eats from a manger, even a low one, she breathes so loudly one can hear her many yards away. About half an hour after leaving the manger she begins breathing all right. When she eats from the ground she breathes all right but that is a wasteful way to feed hay. She has a good appetite, is in good health and gives a good supply of milk. What shall I do for her? Is the milk unwholesome to use?—Subscriber, Lodi.

It must be that she leans her neck on the manger as that seems to be about the only way that she could strangle herself under those conditions. Cut out the manger in the middle so she can not rest her neck against it. Some animals form peculiar habits and we have to use our wits to overcome the trouble for them.

Expense of Saddle Horse

Will you kindly tell me how much it would cost to keep a saddle horse in the city, how often he should be shod, etc. I would only ride him evenings and Sundays.—Subscriber, San Francisco.

The board and care of a saddle horse would be from \$20 to \$25 per month. He should be shod as often as once a month, but that would depend on the horse's gait and the amount of work he gets. Some saddle horses have a shuffling gait and wear out their shoes very fast and need to be shod much oftener. So the feed, care, shoeing and other incidentals that always occur will amount to about a dollar a day.

Inflamed Quarter (Mammitis)

We have a fine Jersey cow that has an affection of one of her teats. About a week ago we noticed her lying down and apparently in much pain. We called a veterinarian and he confessed he did not know the cause. He used an instrument and blew air into the udder. Now one of the teats is hard and what appears to be a hard cord runs through the center of the teat and up into the udder. The milk in this teat is discolored, thick and extremely hard to draw. What treatment shall we give her?—Subscriber, Bairdstown.

Rub the quarter for 10 or 15 minutes at each milking time and be sure to milk out all you can. Also give her a handful of Epsom salts in the feed once a day for two or three weeks.

Chronic Indigestion

I have a horse 11 years old that has chronic scours and has spells of rolling on the ground. He will hold his upper lip up during these spells. Always keeps his head turned to his side when lying down. Can you suggest a remedy?—Subscriber, Templeton.

Your horse has chronic indigestion which causes the scours and the colicky pains at times. It may be partly due to bad teeth and overfeeding. First have his teeth fixed by one who understands that work. Then feed sparingly and very regularly. Clear out the bowels of what is irritating them now by giving a physic of aloin three drams, turpentine two ounces and raw linseed oil one pint. Mix and give at one dose. Then have the following powders prepared by your druggist and give one powder in the feed every night: Powdered gentian three ounces, powdered nux vomica two ounces, bicarbonate of soda four ounces and farina six ounces. Mix and divide into 15 powders.

Thoroughbred Poland China Swine
High Grade Stock of Best Strains.
Young Stock For Sale
M. BASSETT
Hanford, Cal.



Poultry for Profit



A POULTRYMAN'S PARADISE

Written for California Cultivator

By Jean A. Koethen



HERE are two different methods of correction. One is the "Thou shalt not" method, by which the person to be corrected is warned away from his sins. The other might be called the "Thou shalt" method, in which the ideal is held up and the person urged to aim at that. I remember hearing a pastor of mine say he didn't like saying "don't" to his boys all the time. He would rather keep their eyes on the things they ought to do. The poultry keeper makes mistakes enough, goodness knows, the best of us as well as the worst of us, but these are as often due to wrong ideals as to neglect or mismanagement. If his ideal is a nice bare pen so crowded with hens that one of them can hardly find herself in the crowd, he will keep his hens in bare, crowded pens no matter how much room he has. If his ideal of a poultry house is one which keeps out air and sun as well as rain and weasels, such a house he will go on using to the end of his days. It is a pleasure for once, instead of hammering away at the things that ought not to be, sickness and filth and overcrowding and the like, to be able to hold up a picture of what ought to be, and to say, "Look on this picture, and forget the other. This is the ideal. Hitch your wagon to this star."

Down in Imperial County where it is hotter than anything most of the time, and the turkeys grow like pigs, they say, on glorious, broad alfalfa patches, lives a man who is raising his chickens under absolutely ideal conditions. His name is William Brunner and his ranch is near Holtville. Mr. Brunner writes:

"I have 40 acres here, nearly all in alfalfa, fenced with woven wire five feet high. The crop is sometimes cut for hay and sometimes pastured. In winter for about three months the alfalfa makes but little growth, so we raise a crop of barley simply disked on the alfalfa. I have an artesian well continuously flowing through a two-inch pipe, at a temperature of 106 degrees Fahrenheit. The pressure, I am told, is about 14 pounds to the square inch. This well I have in mind to use for incubation and brooding of young chicks, especially since I am convinced that this is an ideal place for that. It seldom rains, very seldom a dew, a few night frosts in winter, sunny all the time. Absolutely no protection is needed except a windbreak and lots of shade after they pass the brooder stage. Corn is now \$13 per ton; barley, 80 cents per hundred pounds; wheat, \$1.50 per hundred pounds. We got 100 R. I. Reds about April 1, after three weeks moved them (97 now) from the brooder to the center of the 40 near a haystack, giving them artesian water, a little corn and wheat once a day. They practically live on green and dry alfalfa, grasshoppers, crickets, etc., and a nicer lot of chickens I never saw. Many have now nice red combs. I would be glad to know what you think of the well as a means of incubation."

I almost hesitated about printing this letter for fear there would be a gen-

eral exodus of poultrymen to Imperial Valley, but I remembered that who ever raises chickens in Imperial Valley must endure the summer heat there, for you can't take your chickens to the beach. It is an alluring picture, though—unlimited green range, bugs and grasshoppers for animal food, and cheap grain, to say nothing of water flowing all the time and no

POULTRY SHOWS

Riverside, Fourth Annual Poultry Show, Riverside District Fair Association, Oct. 5-9, 1915, E. I. Hammond, secretary, Riverside.

San Jose, Santa Clara Valley Association, annual show, Oct. 6-9, 1915, Chas. R. Harker, San Jose, secretary.

San Francisco, Panama-Pacific Exposition, international poultry show, Nov. 18-28, 1915, D. O. Livey, Panama-Pacific Exposition grounds, secretary.

Redwood City, San Mateo County Poultry Association, Nov. 11-14, 1915, Fred West, Burlingame, secretary.

Phoenix, Arizona State Fair, Nov. 15-20, 1915.

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klusman, secretary.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Seattle, Wash., King County Poultry Association, Jan. 10-15, 1916, C. W. Melville, 473 Colman Building, Seattle, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

water bills coming in. I paid \$1.15 for the last 50 pounds of wheat I bought for my turkeys—I don't think of feeding it to chickens any more—and in the community where I live it costs \$5 a month in summer just to keep your lawn from dying, so this picture of abundant green feed and water to burn is like a vision of the poultryman's paradise we used to be told California was.

I am not joking at all. Abundant green range is the one thing most needful for successful and profitable poultry raising. The young chicks raise themselves. Hens lay more eggs and cheaper eggs and are less subject to disease. Breeding stock is more vigorous. Feed bills are far less. In short I can imagine nothing better for

chicks and hens alike than to run on green alfalfa in the cool of the day and scratch in the shade of a haystack while the sun is high, always provided, of course, that they have at all times sufficient shade. This is absolutely essential. We cannot all have alfalfa range and haystacks for our chicks, but we can often come nearer to it than we do.

Let me whisper something else. The man who can most nearly reach this ideal is the man who is going to be able to make poultry pay with the changed conditions we have to meet. The poultryman who buys all his feed is finding it harder and harder to compete with the farmer who raises his feed. If he is an expert and an economist and understands the principles of salesmanship, he can do it, for there is always room at the top, but the half-prepared man will never reach the top unless, like Mr. Brunner, he is in a position to raise eggs in California as cheaply as they can be raised in Kansas and transported to California. This matter of competing with the eggs raised on Kansas and Missouri farms is a mighty serious one to my mind, and I see no way of solving it except by cheaper production.

The plan of using the water from the artesian well for incubation and brooding is perfectly feasible. For brooding it would need only to be run through the brooder house in the two-inch pipe. It would not heat the house much, but if the chicks were placed in Philo brooders, 25 in a brooder, and the brooders placed just under the pipe or arranged so that the pipe would pass through them, after the plan of a Jubilee brooder, there would certainly be heat enough. Indeed, I should think artificial heat hardly necessary in that warm climate. The sun, shining through glass, should keep the houses abundantly warm during the day, and the water in the pipe could be dispensed with at night after the first week unless the nights were unusually cold.

For incubation the water might be used in either of two ways. The first is by running it through any hot-water machine. I am not sure, I don't know that any one could be sure except after trying, but I think water at 106 degrees, running through the pipe of a hot water incubator would keep the temperature just about where it ought to be. If it did not, if the temperature in the egg chamber proved to be under 103 degrees, I do not know just how you could raise it, except by using the incubator lamp, and if you used the lamp there would be no economy in using the warm water.

There is an easier way, however, and this is what I should like to see tried. Stories have been told at various times in the newspapers of persons who, having hot wells or springs, simply put their eggs in a bucket or kettle and let it stand or hang in the water till they hatched. I don't know whether these stories are true or not, but if not, why not? The only requirement for successful incubation is that the eggs shall be kept at a uniform temperature approximately 103 degrees till they hatch. There is no reason why they should not hatch in the sun if the temperature could be kept uniform, indeed, we have known only too often of incubation being commenced in hot weather when it

was neither expected or desired. The process of artificial incubation, as commonly employed, has always seemed to me unnecessarily complex. The old Egyptians just heated a thick-walled building, a sort of oven, arranged so that it would hold the heat, put their eggs into it in smaller clay ovens and let them hatch without any particular attention to ventilation or moisture, and the Chinese methods are just as simple.

Now, this is what I should like to see Mr. Brunner try: Let him take an ordinary washtub, make a hole in one side for the water to run in, and another on the opposite side to let it out. In the middle of this tub let him set the vessel containing his eggs, a pail or pan or kettle will do, provided it is water-tight on the sides and bottom and has holes at or near the top for ventilation. The eggs ought not to lie on top of one another, but I think it would be possible, if the thing proved successful with a few

(Continued on Page 191)

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The owner of 3000 acres near Madera desires to subdivide for real settlers; the land is typical San Joaquin valley loam, free from alkali, and will grow anything; railroad crosses property and there is abundant water at shallow depth; the land is for sale at the right figure to people with proper qualifications; no cash payment down and terms to suit, provided the purchaser has sufficient money to put the land under water. Remember that there are no real estate commissions to pay to swell the price of the land; all the owner wishes is interest on his money. No real estate agents need apply. GREHNE ESTATE COMPANY, 207-208 Berkeley Bank Building, Berkeley, Cal.

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"WAN BEEG WET FOOL"

Declaring that "Life's not worth living. I'll end it all," Giovanni Menotti threw himself into the river in the presence of Rose Bessoni who discarded his proffered love.

Both Menotti and Miss Bessoni are members of a gypsy band. The affair might have had a tragic ending, but the water was only knee deep and Rose taunted the would-be suicide with being "wan beeg wet fool."

NO REWARD FOR PASSENGER PIGEONS

Recent widespread newspaper accounts to the effect that the United States department of agriculture is offering \$10,000 reward to the person finding a passenger or "wood" pigeon nest containing two eggs, resulted in hundreds of letters being sent to the department. The report is not based upon facts, as the department has offered no such reward, and there is every reason to believe the passenger pigeon which formerly roamed the country in flocks of millions is extinct. In 1910 about \$1,000 in rewards were offered by the Clark University for the the first undisturbed nests of the passenger pigeon to be found in the United States. This was a great stimulus to action. The hunt for this pigeon was fruitless. The offer of rewards was renewed for several years until it was fully established that the pigeon was extinct.

The passenger pigeon up to 1885 ranged the American continent east of the Rocky Mountains. The mourning dove has often been mistaken for the passenger pigeon, which in a general way it resembles. However, this bird is quite distinct from the passenger pigeon; it is shorter and has different color markings.

The press reports stated that the now extinct passenger pigeon was valued because of its usefulness in destroying the gipsy moth and other moths and pests which are doing millions of dollars of damage. Although the preservation of this pigeon is much to be desired, it would be of absolutely no value in eliminating the gipsy moth, as the pigeons are almost entirely vegetarian in their diet.

PERCHES

Perches should not be placed more than two feet from the floor of the roosting house; indeed, for the heavier breeds of fowls 18 inches will be quite high enough. They should be placed far enough apart to allow the birds to descend from them with ease.

Perches placed too high are likely to cause bumble-foot and they are also likely to account for internal rupture, a very serious ailment in laying hens. The fowl roosting in a high tree has a better chance of descending in safety to the earth than has the bird whose perch is placed high up in a poultry house. The former has space in which to perform a gradual descent, while the latter is forced to descend in a more perpendicular manner.

Let the perches be placed as recommended above, and have them all on one level, for when they are placed at varying heights the birds make for the highest one, with the result that there is quarrelling and overcrowding. To roost high seems to be the natural instinct of all fowls, but for their own safety they should be under the control of their owner.—Farmers' Review.

Gather the eggs twice a day in hot weather if possible. Often the hen house becomes so hot in the afternoon that eggs in it are soon brought up to the degree of heat when the germ begins development. That means short-lived freshness. The better way is to prevent fertile eggs, but where that is not done extra care should be taken to prevent the change that begins at about 90 degrees.

Have two or three late hatchings. Pullets hatched late will begin laying in the winter.

Questions and Answers

THE EDITOR AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Peafowls Dying

Have lost several peafowls when about four weeks old. Do not know what the trouble is but they open their mouths and seem to gasp for breath. Remedies given fail to bring relief. Have been feeding pheasant food.—Subscriber, Los Angeles.

The gasping for breath, if there are no other symptoms, suggests the presence of gape worms in the trachea, but you can only be certain that this is the trouble when you have found the worms. A gape worm extractor may be purchased at any good poultry supply house, or you can make one out of a hair from a horse's tail, bending it in the middle and making a loop. Open the bird's beak carefully and hold it open with the thumb and fingers of left hand, while with the right you insert the extractor and press it downward into the windpipe. Give it two or three quick turns and withdraw at once or you may suffocate the bird. If there are gape worms, two or three trials will bring some of them up, but you may kill the bird before you learn how to extract the worms. It is said that sometimes salicylic acid in the drinking water (15 grains to a quart of water) or salicylate of soda (three drams to the quart) will effect a cure without the use of the extractor, and I should certainly try one of these remedies first. In any case, remove the birds to absolutely clean ground, where chickens have not been for a year or more, and see that they have plenty of green food and fresh air at night. I do not know the ingredients of pheasant food, but the most successful breeders of peafowls feed the young birds as they would young turkeys, on rolled oats, hardboiled egg, stale bread, cottage cheese, cracked wheat, chopped onion and other greens.—J. A. K.

Fleas

In your issue of August 15 you answer inquiry of M. A. B. regarding method of ridding a place of fleas. We have been through the same experience and got rid of them completely by going over barns and corrals and between houses and barns with an ordinary sprinkling can filled with a cheap grade of distillate. It seemed as if there were millions of fleas, but one application did the work and did it quick.—C. H. Bigger.

Keeping Sweet Potatoes

What is the best method of keeping sweet potatoes over winter for seed? —Subscriber, Laton.

Cold storage without doubt would be best. The next best method would perhaps be to lay on racks in cool, dry place, allowing air to pass freely over them. Some keep them in dry sand but this is declared to be expensive and not a sure way. The following method is recommended in Wickson's "California Vegetables": "Take stout stakes, say five to six feet long and drive them into the ground in a row and five feet apart in some dry place that is not sheltered by trees. Dig the potatoes and throw them up around the stakes to the

height of four feet. For a large field a great many such rows may be necessary; for a small patch perhaps one single stake will suffice. When all dug, put on four inches of straw as covering. After a week or ten days, according to the weather, the potatoes will have undergone a sweating process. They first cover themselves with moisture as if they had been dipped in water. This moisture gradually begins to disappear, and as soon as it does so it is time to throw off the straw. This should be done when the wind is blowing; the potato hills should be left open for three or four hours, or until the potatoes appear entirely dry. If the straw covering is taken off in the morning the potatoes will be dry at noon. Then cover them again with three or four inches of fresh, dry straw and on top of the straw put three or four inches of soil to keep out the cold. On the top of this must be placed a roof which is easily made of shakes nailed to strips of two by three and made in the shape of panels to allow of easy handling and of repeated use year after year. Potatoes kept in this way will preserve perfectly until next spring. Very few, if any, will be found decayed."

Cabbage Worms

Is there any method of control of cabbage and tomato worms besides hand picking?—Subscriber, Lodi.

The so-called cabbage "worm," which isn't a worm but is the caterpillar of a butterfly, is rather difficult to handle. It lives on various plants such as brussels sprouts, cabbage, cauliflower, mignonette, mustard, nasturtium and a large number of others. Essig's "Injurious and Beneficial Insects" gives the following method of control: "The larvae, working as they do into the heads of the cabbages, make control measures practically impossible after they have once begun. Young plants may well be protected by arsenical sprays which are applied with safety until the heads are half-grown. Clean culture should be practiced and no cabbage or host plants allowed to grow during the interval between crops unless they are freely sprayed with strong solutions of arsenicals. Spraying with white hellebore kills the caterpillars without danger to the plants or the consumer. Fortunately most of the cabbage grown in Califor-

nia is raised near the ocean, during the winter and is usually quite free from this pest." Method of control for tomato "worm" is much the same.

Skin Troubles

Referring to an inquiry recently answered by Dr. Petrie regarding skin trouble affecting horses, especially where small lumps had formed on the neck, shoulders and back and the hair came off, an Imperial Valley subscriber writes that he has a horse similarly affected, in fact, he sent an inquiry to the veterinary department regarding his mare, which is smooth and fat and in good condition during cold weather, but as soon as the intense heat of the summer begins her skin breaks out as it would with mosquito bites. He thinks the trouble is quite general in the hot interior valleys, and believes that where a horse is affected in this way it should be disposed of to some coast section or somewhere where cooler summer weather prevails.

Renewing Old Walnut Grove

I have just purchased a 20-year-old walnut grove. The trees are not thrifty, they show much dead wood in the tops. The soil, which is light, even sandy, has been more or less exhausted by intercrops. What fertilizers and what soil treatment will renew this grove without too great expense?—Newcomer.

It is very difficult to make a paying walnut orchard from trees which have been neglected for many years. The orchard just mentioned will require several years of close attention and considerable expense.

The soil being light and having been reduced in fertility by cropping between the trees will need something to restore the humus and most likely this can be done best and quickest by using stable manure at the rate of 10 to 15 tons per acre each year for three or four years. In the meantime green manure crops should be sown each year as soon as the walnuts are gath-

ered and this crop plowed under while green with the addition of 500 pounds of superphosphate per acre broadcasted just before plowing. Very severe pruning must be done, taking out all the branches showing dead wood along the upper side and all the branches through the trees. This may be enough to start a new and vigorous growth with the fertilization but if the trees are planted only 40 feet apart it might be well to take out the alternate diagonal rows of trees which will leave them in squares about 56 feet apart and one-half as many trees on an acre. All the cuts where branches two or more inches in diameter are removed should be painted with a heavy mineral paint or with a paint made by dissolving asphaltum in gasoline. A coat of paint should be applied each year until the cuts have grown over. All the decayed wood should be carefully taken out whether caused by sunscald or by branches cut off and not protected by paint. The holes should then be filled with cement mortar within one-fourth inch of the bark and all painted over. Special care must be given to irrigation and the soil never allowed to become dry. Do not put on more water than will wet the soil four feet deep within 24 hours after the water has been applied but put it on often enough to keep the soil damp, without reference to the time between irrigations—J. B. N.

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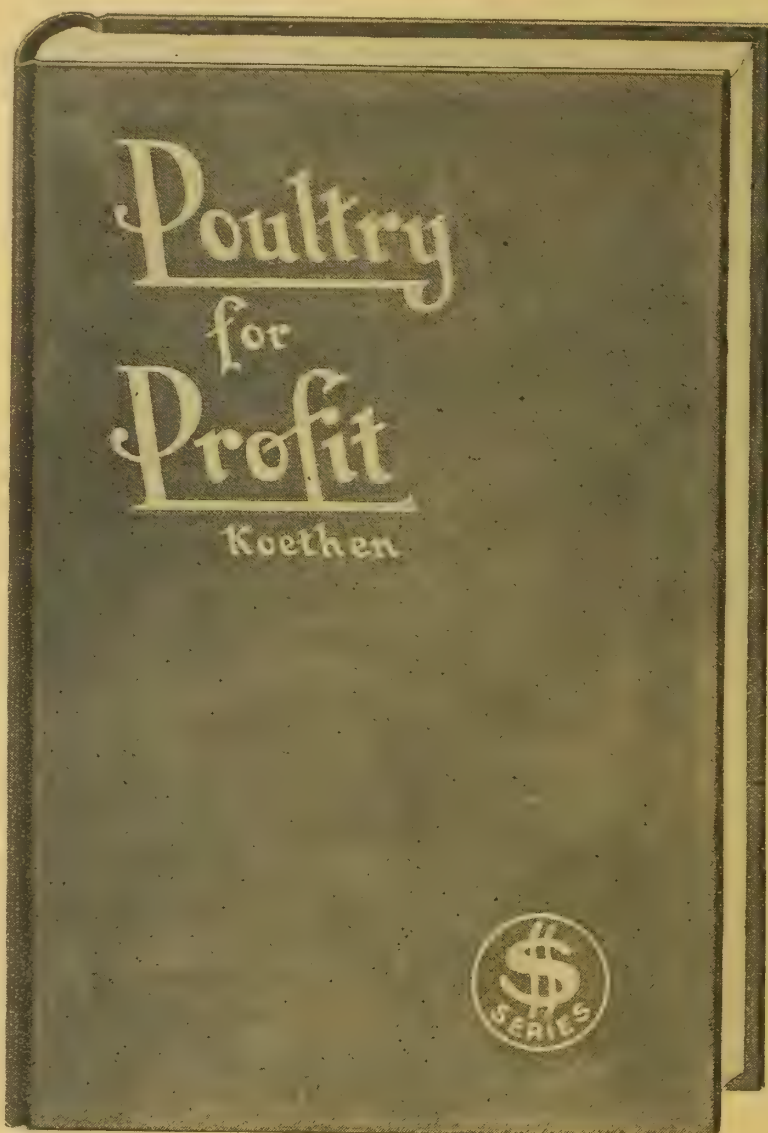
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The Household Department



A BYWAY

The highway marches sturdily to market town and mill,
But I would find a little road that loiters up a hill—

A little vagrant, woodland road, gray-ribboned through the green,
Where berry brambles bar the way and orchard elders lean.

The highway is the world's way, but I would drop behind
To follow little luring paths that only laggards find;
The challenge of the bandit weeds, the tilt with startled bees—
What can the dusty highways give for tourneyings like these?

The highway is the sun's way, and follows east to west,
But there are yellow, vagrant beams that love my road the best—
That linger down the valley ways where lady's lace is spread,
Or slant through shady orchard paths and tint the tree trunks red.

The highway, the highway!—you follow where it calls;
I watch you through a leafy screen from crumbling orchard walls—
I wait and smile among the green and know that by and by
We'll lure you back through dust and dew—my little road and I!—

Margaret Lee Ashley in Harper's Magazine.

THE HOUSEHOLD CONTESTS

THE present week's recipes we believe are among the best and most practical our housewives have contributed. What kind of recipes would you like next for the October contest? Please write and tell us.

For the September contest we will turn away from recipes and follow the suggestion of Mrs. F. A. Marks of Los Angeles who writes:

"For some time I have had in mind to suggest that Saturday's work be made a subject for once. Saturday is a busy day for housekeepers, with the extra cooking, a final touching up of the home for over Sunday, and other duties that come in on that day. Have some of the efficient women worked out a plan that makes it less arduous and exhaustive and less to be dreaded? If so, do ask them to pass it on."

Cash Prizes

For the best short article along the line suggested in the above paragraph, \$2.00 cash; for the second best, \$1.00. Please write on one side of paper and send in your communication early to Household Department, California Cultivator, Los Angeles. All should be in this office by Thursday morning, September 9. Articles will appear in the issue of September 16.

All whose articles are published will receive three months' extension of subscription if they have not already received such extension this year. With your article send name and address of member of your family now receiving the Cultivator that the extension may be properly credited. Or, of course, a new subscription may be started instead.

PRIZE WINNERS

Winners of the cash prizes this month are M. Louise Berneike first; Ella M. Tarbet, second. We did not ask for articles with the recipes, but these are so good and the recipes with them so excellent that the cash

prizes were awarded to them. The other contributions also are awarded prizes in the three months' subscription to the Cultivator.

NEW WAYS OF COOKING VEGETABLES

Written for California Cultivator
By M. Louise Berneike, Santa Ana

The cooking of most vegetables may be greatly facilitated and the flavor retained by a procedure which seems to be little known. The writer's attention was first called to this method by a recipe for making a vegetable soup. The recipe proved to be fine and was somewhat as follows: Two-thirds teacup each of diced carrot, turnip and potato. One small onion finely sliced. Three or four parsley leaves, one tablespoon of olive oil or other fat. Melt the fat in the cooking vessel. Add the diced vegetables in the order above named. No water save that which adheres to the diced vegetables as taken from the rinsing water. The easiest vegetable to cook is placed at the top. Sprinkle over them a teaspoon of salt and a little pepper. Cover very tightly and cook five to ten minutes without removing cover. Listen for the sound of frying in the kettle and immediately add boiling water to cover the vegetables. They should not brown. Let them cook a few minutes longer unless already tender. Pass all through a sieve together with a sliced tomato. Add boiling water through the sieve while washing the vegetables to make a quart of soup. Return to the kettle to keep hot till served. Add more salt and pepper to the taste, but do not boil, as the flavor will be impaired.

Try it. You will want more. Vary the soup by using or adding other vegetables as chiles, sweet potato, Jerusalem artichoke, and so forth.

Here, by the way, is a suggestion: Jerusalem artichoke is a fine vegetable in soup, as well as stewed.

Curiosity led me to investigate the contents of the cooking kettle after about two minutes of cooking. The amount of liquid present was astonishing, evidently the juices of the vegetables were withdrawn by the combined action of heated fat and salt, while the closed cover retained the steam. But the most astonishing feature was the rapidity with which these vegetables were cooked. Ten minutes sufficed to make them perfectly tender.

Then came the question, why not apply the same principle to the cooking of vegetables in general? In short, it was soon proved that peas, beans, string beans, sliced carrots, turnips, chayote, cucumbers, and so forth can be stewed in this way with great facility. Ten minutes suffices to cook peas perfectly tender. But remember to add boiling water on removing the cover—never cold water.

With dried beans, peas or lentils, one must first soak them over night in cold water. Turn this off and add fresh cold water in the morning, with one-fourth teaspoon of baking soda to each pint of dried beans used. Let them gradually heat and then boil till the yellow color is withdrawn from beans. Pour off this water and rinse the beans with a little boiling water. Add a tablespoon of olive oil or other

fat and a teaspoon of salt for each pint of dried beans used. Stir until the hot beans are all coated with fat, add half a teacup of boiling water, cover very closely and cook until frying commences, then cover well with boiling water and continue boiling briskly till beans are done which will not be over half an hour unless the beans are very old. A very small onion sliced and added together with a parsley leaf when the fat is first mixed with the beans is greatly relished by most people.

Spinach, lettuce, beet leaves, or other greens are best and most quickly cooked in a tight vessel with no water save that which adheres from the washing. They are so succulent that no fat is needed to assist the process.

The flavor of most vegetables is far better when cooked in this way, perhaps because the flavor is not lost by long boiling. But one must never forget to have boiling water ready to add to hot vegetables. Cold water has the same effect on them as on flannel clothing. It shrinks them and consequently toughens them and lengthens the cooking process.

VEGETABLES FOR SERVICE

Written for California Cultivator
By Ella M. Tarbet, Onarga, Illinois

The nutritious value of vegetables and their healthfulness as a food are largely determined by the method by which they are cooked. Of course a vegetable should be fresh and sweet or if canned goods have to be used a good brand must be selected. Do not overcook vegetables, for this renders them unpalatable and unwholesome.

Succulent vegetables give tone to the blood, nerves and digestive apparatus when they are properly cooked and masticated. A starchy vegetable such as potato, rice or macaroni, and a green vegetable such as carrots, spinach, squash or onions are sufficient to cook for dinner, and if supplemented with a fresh green vegetable served raw as a salad, the kinds being selected as most appetizing in combination with the meat or main dish, the housewife will find she is planning a balanced meal.

Celery contains sulphur and helps to ward off rheumatism. It is also a nerve tonic. Onions aid in the cure of nervousness, and are excellent for colds and coughs. Asparagus stimulates the kidneys. Cabbage helps purify the blood. Tomatoes are good for a torpid liver. Spinach is good for constipation, is often called the "broom of the stomach." Parsnips and carrots possess the same properties as sarsaparilla.

Corn Fondue

Mix well together one cup of milk, one cup of breadcrumbs, one cup of corn, one cup of grated cheese and one level tablespoon of melted butter. Season with salt, pepper and a dash of paprika. Then add the yolks of two eggs which have been well beaten; lastly fold in carefully the stiffly beaten whites of the eggs. Bake in individual molds or baking dish. This is a good meat substitute.

OUT ON ONE COUNT

After preaching a sermon on the fate of the wicked a clergyman met an old woman well known for her gossiping propensities and he said: "I hope my sermon has borne fruit. You heard about the place where I said there shall be wailing and gnashing of teeth?"

"Well, as to that," answered the dame, "if I 'as anything to say, it be this: 'Let them gnash' teeth as has 'em, I ain't.'"—London Opinion.

MORE NEW RECIPES

Baked Asparagus and Cheese

One bunch asparagus, two tablespoons butter, three tablespoons flour, one-fourth teaspoon salt, one cup asparagus juice, one-half cup milk, one egg and a few buttered breadcrumbs. Scrape, wash and cut asparagus in one-inch lengths, cook in boiling water until nearly tender, drain. Make a white sauce of butter, flour and milk, add beaten eggs and cheese. Cook till cheese melts, add one cup water from juice. Place asparagus and white sauce in alternate layers. Sprinkle over buttered breadcrumbs. Cook till brown on top.—Lola De Lefturch, Inglewood.

Filled Cabbage

Hollow out a large, firm cabbage leaving it about one or two inches thick, then fill with round steak that has been run through the food chopper and seasoned with salt, pepper and butter. Place the core on top, also some of the large leaves. Tie these on tightly so that the meat will not come out, then place in boiling water which has been salted. Cook about two hours or until cabbage is thoroughly done. Serve with melted butter in which nutmeg has been grated. It makes an appetizing and artistic dish to place the cabbage in the center of a chop plate and garnish with mashed potatoes, chopped beets, carrots and parsley.—Mrs. R. K. Glasscock, Simi.

Delicious Creamed Cabbage

Chop coarsely one head of cabbage and cook ten minutes in boiling, salted water without covering; drain, mix two level tablespoons of butter with two tablespoons of flour and add half pint of liquid from the cabbage, one cup of scalded milk and salt to taste. Stir over fire until thick. Place alternate layers of cream and cabbage in baking pan, sprinkle with stale bread crumbs and brown in oven.—Mrs. H. W. Schroeder, Marshall, Minnesota.

Cauliflower (French Style)

A French method of preparing cauliflower is one of the most appetizing I know. Boil cauliflower in salted water or use pieces of cooked cauliflower which have been left over. Mash it with a quarter of its bulk of grated cheese; season with salt and paprika and mold into a ball. Place in a baking-dish and cover with a thick cream sauce and brown in a hot oven.

For the sauce use two tablespoons of butter and two tablespoons of flour to a cup of milk.—A. C. Harris, Bowles.

Celeriac Salad

Boil two medium sized celeriac roots in salted water until tender; peel and cut in dice. Arrange on crisp lettuce leaves with tiny cheese balls made by mixing finely chopped walnuts with twice their bulk of cream cheese, adding a little thick cream, seasoned with salt and pepper. Sprinkle finely minced red sweet peppers over the salad and serve with a dressing made with six tablespoons of olive oil, half teaspoon of salt, six drops onion juice, one-fourth teaspoon of paprika, to which has been gradually beaten in three tablespoons of lemon juice.—Mrs. C. B. Kirkpatrick, Los Angeles.

Fried Corn

After washing and removing silk from the corn, cut from the cob. Melt sufficient butter in saucepan to well coat the corn. Put in corn, stirring well to get it all covered with butter. For six ears of corn, take one small bell pepper, from which the seeds have been removed. Chop, put into corn with about one tablespoon of water, cover closely. Cook over a slow



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fire, stirring often to prevent sticking, about fifteen minutes; season when removed from the fire.—Miss E. R. Salisbury, Los Angeles.

Fried Corn

Here is a way to prepare sweet corn which is very fine: Brush and silk it as for boiling (when it is just in the milk.) Have a large pan and a sharp knife, cut off the tips of the grains, scraping the rest out, then fry three slices of bacon. Fry the corn in the grease with enough salt and pepper to suit taste. Turn it as often as it browns with a pan cake turner. Takes twenty minutes to half an hour to cook it done.—Mrs. Carrie B. Kuhnert, Merced.

Eggplant Loaf

Remove the skin from a good sized, firm eggplant, cut in small pieces and boil until tender and soft. Drain and mash. Chop fine or put through meat chopper a half pound lean, fresh pork. Add this to the pulp of eggplant and mix thoroughly. Then add a teaspoon of melted butter, pepper, salt, a bit of paprika and two well beaten eggs. Form the mass into a loaf and

(Continued on Page 191)

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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, August 18, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:

Creamery Extras26
First23

CHEESE

Prices to trade, 1 to 2 cents higher:

Arizona Daisies14½
Arizona Longhorn17@17½
California Fresh13½
Cheddar20@21
Domestic Swiss20
Eastern Daisy19
Eastern Twins17½
Imported Swiss33@35
Longhorn17½@18
Oregon Triplets15½@16
Tillamook16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts30
Candled32@34
Petaluma-Santa Rosa30
Northern Case Counts25
Northern Fresh Extras32
Other Outside Stock29

Prices to producers:

Hens, lb.11@17
Roosters, old9
Broilers, lb.17
Fryers15
Roasters, lb.15
Turkeys14@16
Ducks12
Geese11
Squabs, doz.100

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7.75
Prime Steers7¼@7½
Helfers6¼@6½
Calves, lb.8½@9
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head4.75@5.00

POTATOES

Wholesale selling prices:

Sweets, yellow, lb.2½
Northern Burbanks1.25@1.30
Red Shimas, bag1.35@1.50

ONIONS

Wholesale selling price:

Boiling Onions, crate1.35
Brown, cwt.1.35
Crystal Wax, crate90@95
Red, cwt.1.00
Local Silverskins, lug50
White Globe, lug50
Garlic10
Sets, White and Brown, lb.10

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax4@4½
Limas3½@4
Green3@4
Cabbage, sack65
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.40@65
Chicory, doz.1.00
Chives, doz.35@40
Corn, lug30@35
Cucumbers, lug1.00@1.50
Pickling, lug3@3½
Egg Plant, lb.40
Escarole, doz.10
Horseradish, lb.40
Leeks, doz.30
Lettuce, doz.40
Mint, doz.30
Okra, lb.5@6
Onions, Green, bunch20
Oyster Plant, doz40
Parsnips, doz.35
Parsley, doz.15
Peas, Telephone4@6
Peppers—
Chili, Green3@3½
Bells4@6
Rhubarb—
Crimson Winter, box75
Strawberry75@85
Spinach, doz.20
Squash—
Crookneck, box35
Summer, lug30@35
Tomatoes—
Lug30@40
Turnips30

FRESH FRUIT

Wholesale selling price:

Apples—
Alexanders70@75
Bellflower1.25
Gravensteins90@1.45
Skinner's Seedlings1.40@1.50
Crabapples, lug1.00
Avocados, doz.4.50
Bananas, lb.4@4½
Berries—
Strawberries, tray75@1.00
Blackberries, tray75
Raspberries, tray80

Cantaloupes—

Tip Top1.50@1.75
Paul Rose, crate1.10
Columbia, crate1.75
Casabas, crate2.00
Cherimoyas, lb.20@25

Figs—

Black1.00

Grapes—

Black Hamburg, lug90
Malagas, crate1.00@1.00
Muscats, crate90@1.00
Concord, crate1.50
Thompson Seedless, lug90@1.00
Tokay, lug1.40@1.45
Nectarines, lug1.00@1.10

Peaches—

Clings, box90@1.00
Freestones, lbx50@60
Elbertas, lb.1½
Pears, Bartlett, box1.50

Plums—

Climax, lug90
Damson65@75
Hungarian1.10@1.25
Kelsey75
Satsuma, lug65
Burbank, lug40@50
Wickson70@90
Tragedy, lug90@1.00
Pineapples, lb.4½@5½
Quinces, lug75@80
Sugar Prunes, lug75
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons1.25@2.25
Juice Lemons1.00
Grapefruit, Seedless2.75
Limes, basket75
Valencias4.00@4.25
Sunkist3.75

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, boxes, 7½@8½
Apricots8@16
Nectarines12½
Peaches5@7
Pears, lb.11@12½
Prunes8@12½

NUTS

Prices named by California Walnut Growers' Association are:

No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Peanuts—
California, Raw6
Japan5½
Eastern7½
Rice Corn5.00@5.25

HONEY

Wholesale selling price:

Comb, Fancy, Water White16
White15
Extracted Water White8½
White5½@6½
Light Amber6
Beeswax25

RICE

Wholesale selling price:

California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:

Producer's price not far from one dollar under these quotations:
Limas5.00
Bayous6.00@7.00
Lady Washington5.25
Pinks4.25@4.35
Black Eyes6.75@7.00
Lentils12.50
Small White5.25
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.

Barley, Hay10.00@12.00
Wheat Hay10.00@12.00
Tame Oat10.00@13.00
Alfalfa10.00@11.50
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow2.25
Corn, White2.35
Wheat2.10@2.15

Oats, White1.90
Oats, Hulled2.25
Egyptian Corn2.20
Kaoliangs1.60
Barley Seed1.55
Barley, Hulled1.90
Kafir1.95
Milo1.85
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy1.90
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.2.30
Cracked Wheat, cwt.2.25
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.60
Fish Meal3.15@3.25
Rolled Barley1.50
Rolled Oats1.95
Middlings2.20
O. & W. Middlings1.80
Feed Meal2.35
Scratch Feed2.20@2.50
Oyster Shell1.15@1.25
Scratch Gritlets2.40@2.50

San Francisco Market

SAN FRANCISCO, Aug. 17, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras27
Prime Firsts25
Firsts24½

CHEESE

Wholesaler to retailer.

Oregon, Y. Am.14½
Young America11½@14
California Flats8@13
Cheddar20
New York Cheddar20
Oregon Twins13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras31½
Select Pullets27½

Price to producer:

Hens, lb.13@16
Fryers22@24
Broilers23@25
Roosters—
Young23@24
Old10@12
Squabs2.25@2.75
Ducks12@15
Steers4@6½
Belgian Hares, lb.6@7

LIVE STOCK

San Francisco prices, gross weight:

Steers4@6½
Cows and Helfers3@5½
Calves, lb., live wt.6@9
Hogs4@7½
Wethers6@6½
Ewes5½@5¾
Milk Lambs, lb.7½@7¾
Shorn stock, ¼@1c less

POTATOES

Wholesale selling price:

Burbanks, cwt.1.00@1.25
Delta75@1.00
Sweets, lb.2@3½

ONIONS

Wholesale selling price:

Onions, cwt.40@60
Bermudas1.00@1.15
Australian Browns75@1.00
White, crate65@85
Wax, crate1.00@1.10
Garlic, new6@8

WEATHER CONDITIONS

For Week Ending August 14, 1915.

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Stations	Past Week	Seasonal to Date	Normal to Date
Eureka	.00	.26	.14
Red Bluff	.00	.00	.00
Sacramento	.00	.00	.00
San Francisco	.00	.01	.01
San Jose	.00	.00	.00
Fresno	.00	.00	.00
Independence	.00	.04	.00
San Luis Obispo	.00	.01	.03
Los Angeles	.00	.0	.00
San Diego	.00	.00	.00

Temperature Data

—Past Week—	Maxi-	Mini-
	mum	mum
Eureka	66	52
Red Bluff	100	64
Sacramento	96	56
San Francisco	72	52
San Jose	86	48
Fresno	102	60
Independence	96	54
San Luis Obispo	86	50
Los Angeles	94	58
San Diego	76	62

VEGETABLES

Wholesale selling price:

Beans—
String, lb.1½@2½
Limas, lb.4@5
Wax, lb.3@4
Corn, sack50@1.30
Cucumbers25@40
Eggplant, lug35@40
Lettuce, crate50@1.00
Okra, lug35@50
Peas, sack1.25@2.00
Peppers—
Bell, box25@40
Chili, Mexican, lug25@35
Rhubarb75@1.00
Squash—
Summer, lug25@40
Tomatoes—
Delta, lug50@75
Bay75@90

FRESH FRUIT

Wholesale selling price:

Apples—
Alexander50@85
Gravenstein70@1.10
Bananas, Hawaiian, bunch1.25@2.00
Blackberries, chest1.50@2.50
Cantaloupes—
Turlock Ponies50@65
Southern, crate75@1.00
Turlock Standard75@85
Delta, lug40@65
Casabas, lb.1½@2
Figs, box, single layer, black50@65
White, single layer50@75
Grapes—
Thompson Seedless, crate60@75
Tokay, crate1.00@1.50
Muscat, crate50@65
Malagas, crate65@75
Huckleberries, lb.7@11
Nectarines, crate75@1.25
Peaches—
Wrapped, box30@50
Lug35@45
Strawberry, lug65@75
Pears, Bartlett, wrapped1.10@1.40
Canners', ton20.00@30.00
Pineapples, doz.1.00@1.75
Plums, crate50@75
Prunes, crate75@85
Strawberries, chest1.00@2.25
Watermelons, doz.1.00@3.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, seedless2.50@3.50
Lemons1.50@3.50
Lemonettes1.25@1.75
Limes, Mexican, case4.00@5.00
Tangerines, halves75@1.75
Valencias2.75@3.25

DRIED FRUITS

Wholesale Prices are:

PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼c. All outside sections ¼c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Choice Fancy
Apricots5½c 6¾c 7¼c 7¾c
Peaches3¼c 3¾c 4 c 4½c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7c; 12-oz., 6c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:

Nonpareil16½
I. X. L14
Ne Plus13
Drakes11½
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6
Italian Chestnuts6½@7

BEANS

Wholesale selling price:

Limas4.60@4.70
Pink3.55@3.65
Black Eyes4.50@4.75
Cranberry4.00@4.25
Small White4.30@4.40
Garbanzos4.00@4.25
Large White4.30@4.40
Bayou4.25@4.50
Manchurian Speckled Bayous3.80@3.90
Manchurian Butters4.50@4.75
Red Mexican5.40@5.50
Red Kidney5.90@6.00
Horse Beans2.00@2.25

HONEY

Wholesale selling price:

Comb, Water White, new14@16
Light Amber, new11@12
Amber, new10
Extracted White6½@7½
Light Amber3½@4½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:	
Sacramento Valley	8@10
Sonoma-Mendocino	11 1/2@13
Oregon Clusters	11 1/2@13

HAY

Under date of August 14, 1915, Scott, Magner & Miller say: Receipts of hay for the week have amounted to 3765 tons. The above was sold off to good advantage. A few consignments of fancy wheat hay have been coming in recently. This was quickly placed. A steamer is now receiving hay purchased in this market for the government of Australia and another steamer has been chartered to load a cargo at this port for the same destination. This hay is especially prepared and repressed into the smallest possible volume on account of freight charges. Exportations to Australia during recent months together with other heavy export orders have taken vast quantities of hay and this is bound to result in benefit to all.

The harvest continues in active progress. Much hay is being put into storage. The arrivals of alfalfa continue to be light and the market very steady. There is considerable movement in alfalfa in the interior and the market feeling is apparently a little stronger than heretofore. Straw continues dull and uninteresting.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt. bales)	13.50@14.50
No. 1 Wheat or Wheat and Oat	11.50@12.50
No. 2 Wheat or Wheat and Oat	8.50@10.00
Choice Tame Oat	11.00@12.50
Other Tame Oat	9.00@10.50
Barley	8.00@10.00
Wild Oat	6.00@9.00
Alfalfa	8.00@11.00
Stock Hay	5.00@5.50
No. 1 Barley Straw	.25@.40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.72 1/2@1.75
Barley Feed	1.27 1/2@1.30
Barley, Old Crop Feed	1.02 1/2@1.05
Corn, Eastern Yellow	1.84@1.85
Corn, Egyptian White	1.85@1.90
Oats, Red, Feed	1.25@1.32 1/2
Oats, White, Feed	1.50@1.52 1/2
Millet	2 1/2@3 1/2
Flaxseed	5@5 1/2
Rye	2.00@2.25
Sunflower	5@5 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	15.00@16.00
Bran, ton	27.50@29.00
Feed Cornmeal	42.00@42.50
Cracked Corn	41.00@42.00
Rolled Barley, ton	26.00@27.50
Rolled Oats, ton	37.00@37.50
Middlings	32.00@35.00
Shorts	28.50@29.50
Oilcake Meal	36.00@37.50
Cocanut Oilcake Meal	22.00@23.00

Citrus Fruit Market

LOS ANGELES, August 18, 1915.

The orange market makes glad the heart of the Valencia grower. There yet remain only about 2000 cars of Valencias to go, and from present appearances there will be good demand up to November.

Notwithstanding the slight impetus given to the lemon market by the few days of hot weather there was another serious sag when the cooler weather returned, and the most discouraging condition prevails in nearly all markets. During last week there were only about 36,000 boxes of foreigners afloat, and 30,000 of these will be cleaned up during the coming week, but notwithstanding this the speculators and larger dealers refused to purchase in any large quantity. It is generally believed that there will be no very active lemon market this season.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 30,894, lemons 5810, total 36,704. To same date last season: oranges 35,022, lemons 2568, total 37,590. From Tulare County this season: oranges 5649, lemons 3202, total 5851. Last season same date: oranges 5875, lemons 30, total 5905. From northern counties, oranges 630, lemons 2. Last season same date: oranges 404, lemons 5.

NEW YORK, Aug. 16.—Sixteen cars Valencias, one mixed car and seven cars lemons sold. Market lower on oranges, lemons active, higher. Fair.

VALENCIAS—	Avg.
Aurora, Amer. Ft. Dis.	4.50
Jupiter, Amer. Ft. Dis.	4.35
Jupiter, Amer. Ft. Dis.	3.70
Duquesne, A.C.G. Ex.	4.70
Fort Pitt, A.C.G. Ex.	4.45
Old Mill, A.C.G. Ex.	3.90
Carmencita, S.T. Ex.	4.55
Colombo, S.T. Ex.	4.20
Las Palmas, S.T. Ex.	3.80
Charter Oak, S.D. Ex.	4.90
Red Ridinghood, S.D. Ex.	4.55
Iris, D.M. Ex.	4.70
Violet, D.M. Ex.	4.30
Mother Colony, S.T. Ex.	4.40
Glendora Heights, xf., A.C.G. Ex.	5.60
Glendora Heights, Foothill, A.C.G.	4.55
Evolution, A.C.G. Ex.	4.30
Whittier S.T. Ex.	4.40
Pico, S.T. Ex.	3.60
La Puente, S.T. Ex.	3.90
Colombo, S.T. Ex.	4.25
Las Palmas, S.T. Ex.	3.95
Colombo, S.T. Ex.	4.20
Las Palmas, S.T. Ex.	3.60
Tesoro Rancho, Blue	4.35
Tesoro Rancho, Red	4.05
VALENCIAS—WALVES—	
Red Ridinghood	1.90

GRAPEFRUIT—

Orchard	\$2.80
LEMONS—	
Limoneira Co., selected, vent.	3.05
Limoneira Co., iced	3.00
Gold	2.55
Luster	2.25
Sunrise	2.15
California	1.95
Pico, ventilated	1.85
Prairie Chicken, ventilated	2.00
Independent, xf.	2.45
Independent, xc.	2.25
CINCINNATI, Aug. 16.—Five cars sold. Market doing better on Valencias and lemons.	
VALENCIAS—	Avg.
Honest Pack, Tustin P. Co.	3.15
Reliable, S.T. Ex.	4.00
LEMONS—	
Progressive, Q.C. Ex.	1.55
California	1.05
Dan Patch, S.B. Ex.	2.15
Hill, Or. Ex.	1.65
Lemonade	1.35

PHILADELPHIA, Aug. 16.—Six cars sold. Market easier on Valencias, unchanged on lemons.

VALENCIAS—	Avg.
De Luxe, xf., Covina Hnts. G.	4.95
Olive Heights, Growers Ft. Co.	4.80
Angeles, Growers Ft. Co.	4.60
Outlook, Growers Ft. Co.	4.55
Geo. Washington, Or. Ex.	4.65
Martha Washington, Or. Ex.	4.50
Cowboy, Or. Ex.	4.35
LEMONS—	
Fuchsia, S.A. Ex.	1.30
Patio, S.T. Ex.	1.65
Trail, A.C.G. Ex.	2.05
Urchin	1.30

ST. LOUIS, Aug. 16.—Three cars sold. Market strong on Valencias, steady on lemons.

VALENCIAS—	Avg.
Searchlight, Or. Ex.	4.45
S. S. Brand	3.40
LEMONS—	
Pitcher, V.C. Ex.	1.50
Bridal Veil, V.C. Ex.	2.65
White Cross	2.25

CLEVELAND, Aug. 16.—Three cars sold. Market steady on both Valencias and lemons.

VALENCIAS—	Avg.
Golden W.	3.35
Blue W	4.00
Chrysanthemum	2.35
Aloha	1.80
Whittier, S.T. Ex.	3.75
Pico, S.T. Ex.	3.50
La Puente, S.T. Ex.	3.25
LEMONS—	
Pronghorn, O.K. Ex.	2.25
Red Ensign	2.05
White Ensign	1.45
Radiant, Or. Ex.	2.65
Luster	2.25

PITTSBURGH, Aug. 16.—Six cars sold. Market is steady on both lemons and oranges.

VALENCIAS—	Avg.
Orchard, National O. Co.	4.55
Standard, National O. Co.	4.30
Plain Ends, National O. Co.	4.30
Plain Ends	2.65
Violet, D.M. Ex.	4.45
Jasmine, D.M. Ex.	3.35
Glendora Home, A.C.G. Ex.	4.25
LEMONS—	
Pico, S.T. Ex.	2.25
La Puente	1.55
Coyote, O.K. Ex.	2.05
Bluejay	1.50
Red Flag, Q.C. Ex.	2.50
Cry Baby	2.25
Royal	1.30
O. I. C.	1.10

BOSTON, Aug. 16.—Eight cars sold. Market unchanged on Valencias, doing better on lemons.

VALENCIAS—	Avg.
Orchard, National O. Co.	4.95
Standard, National O. Co.	4.55
Whittier, S.T. Ex.	4.80
Pico, S.T. Ex.	4.00
LEMONS—	
Squirrel, A.H. Ex.	2.65
Prairie Chicken	2.25
Radiant, Or. Ex.	3.00
Luster	2.55
Pet, S.D. Ex.	3.00

CHICAGO, Aug. 16.—More than 455 carloads of peaches, enough to make a train five miles long, were sold in Chicago during "peach week." California Elbertas are firmer, 35@50 for 20-pound boxes; Crawfords, 40@50; best southern and Illinois Elbertas, bushel, 1.00@1.10. Grapes, California, cases, 4 baskets, Malaga, 1.25@1.50; seedless, 90@1.00; cases, 8 baskets, Delaware, 1.50. Lemons, boxes, California 2.75@3.25. Oranges, boxes, California Valencias, 4.50@5.00. Plums, California, cases, four baskets, Diamond, 1.10@1.20; Wickson, 1.00@1.10; German, 1.00@1.10; Satsuma and Yellow Egg, 90@1.00. Pears, boxes, 50 pounds, Bartletts, California, 1.25@1.50; Washington, 1.35@1.50. Pineapples, few Florida on sale, slow at 1.50@2.00 per crate. Cantaloupes, standard cases, California, 2.50@2.75; fancy stock to 3.00; Arizona, overripe, 75@1.75; flat cases, New Mexico, 1.00@1.25.

HANDBOOK OF BLASTING

The DuPont Powder Company of Wilmington, Delaware, has just from the press a new "Farmer's Handbook of Explosives." It is practically complete as to methods which may be employed in blasting out stumps, breaking up rocks, opening hardpan formations, or any other agricultural use of dynamite.

BILLIKEN HERD

Mr. C. V. Cunningham of Mills, Sacramento County, has sent us a leaflet regarding his herd of registered O. I. C. swine. It is a fine showing of the worth of this old-time favorite of the Middle West. In addition the leaflet contains some most useful suggestions for the swine breeder. We doubt not it will be sent for the asking.

NEW RECIPES

(Continued from Page 189)

bake in a buttered dripping pan or a buttered baking dish. Which ever way the loaf is baked it should be covered with slices of salt pork and baked until the pork is a rich brown. —Nita Ferris, Woodlake.

Stuffed Eggplant

Select full grown egg plant, cut off the top and remove the inside, leaving the shell about one half inch thick; chop the part removed very fine and add an equal amount of well seasoned mashed potatoes and a few bread crumbs. Put a little butter in a frying pan and when hot pour in the mixture and let cook about 15 minutes, stirring to prevent burning. Fill the shell with this and cover the top with the piece which was cut off and bake in a moderate oven half an hour. —Miss D. N. Parker, Caruthers.

Eggplant Cakes

Wash eggplant, slice about one haif inch thick then peel the outside off. Cook in kettle with small amount of water and a pinch of salt until tender. Put in colander and drain well, mash, beat in one egg and a small amount of flour until a stiff batter is formed. Drop in small cakes in hot drippings or lard. These are very nice for breakfast.—Mrs. E. Robertson, Los Angeles.

Spinach and Carrots

Spinach with carrots make a nice entree. Peel three carrots and cut into two inch lengths. Boil in salted water until tender; drain; cut the center from each. Mix four tablespoons of chopped cooked chicken, two tablespoons chopped cooked ham, one tablespoon bread crumbs, one teaspoon of chopped parsley, one tablespoon white sauce and one egg yolk. Season with salt, pepper and nutmeg. Cook until hot. Fill centers of carrots with this mixture, place in buttered pans and bake 15 minutes. Arrange 2 cups of hot chopped cooked spinach in shape of a pyramid on a hot dish; season and surround with baked carrots. Decorate with onions and pour hot gravy around.—Miss A. Butcher, Healdsburg.

Spanish Squash

Peel and cut in small pieces tender summer squash. Heat a large spoon of drippings in stew pan; add to it the squash; also one finely sliced onion and a large tomato cut up with pepper, salt and a bit of butter. Stir constantly, cooking in its own moisture. Delicious.—Mrs. O. P. Hart, Hermosa Beach.

Turnips and Peas

Peel turnips and boil whole. Prepare peas, cook and season for the table. When turnips are tender remove from the water, scoop out centers to form cups; place on a platter or in shallow dish. Fill cups with the peas and place in the oven until the rest of the meal is ready, then serve at once. This is very easily prepared and is delicious.—Miss Elvin Follensbee, Chino.

Fried Summer Squash

Wash young summer squash but do not peel. Slice one quarter of an inch thick. Sprinkle with salt and let stand about half an hour. Take dry bread and brown in oven, then grind in food chopper and sift through sieve about as fine as a flour sieve. Dip the squash in beaten egg, then in fine bread crumbs. Fry slowly to a delicate brown.—Mrs. J. F. C., Hemet.

A POULTRYMAN'S PARADISE

(Continued from Page 185)

eggs, to make a container similar in shape to a wash boiler, in which the eggs could be placed on trays one above the other, and to set it in a rectangular tank. The water should come up as high on the outside of the container as the eggs are inside, and it would be necessary to cover the whole thing or to have it under a roof lest the heat of the sun affect the temperature. It seems to me it would be very easy to work out a scheme of this sort, and the expense would be trifling. The main question is that of temperature. If the water is run directly into the tub at 106 degrees, what will the temperature of the egg chamber be? The temperature of a sitting hen is 105 or 106 degrees, and her eggs are never overheated. What loss of heat will there be when the water is run around the egg chamber? I see no way of finding out except by trying, and this is why I should experiment at first with a few eggs. It may be necessary to cool the water a little before it enters the tub, or to place the container at some distance from the point where the water enters to regulate the amount of water used, so that when more heat is needed, more water can be let in.

Several very nice questions enter into the planning of such an incubator, but that it can be worked out I don't doubt for a minute. The outside weather has always to be reckoned with. If it were not for that, uniform temperature of water would mean uniform temperature in the egg chamber. Then there is the matter of moisture, but it seems to me the air which enters the ventilating holes should be sufficiently moisture laden, after passing over the warm water below it, to keep the air in the egg chamber moist enough, even for Imperial Valley. But then again I do not know just how much humidity there is in the air there. Maybe it is humid enough, just as it is, and the water passing around the egg container would have to be covered to keep the chicks from drowning. One gets into a bottomless sea of speculation if he begins to reason. The best way is to try and see how the eggs hatch. I hope Mr. Brunner will let us know how he succeeds.

The conceited man is certainly an I specialist.—Rural New Yorker

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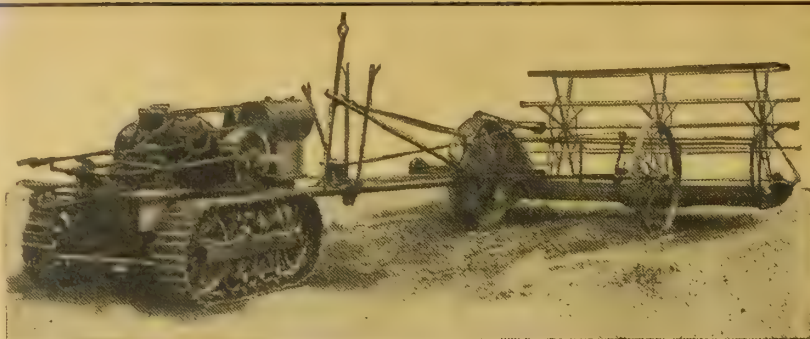
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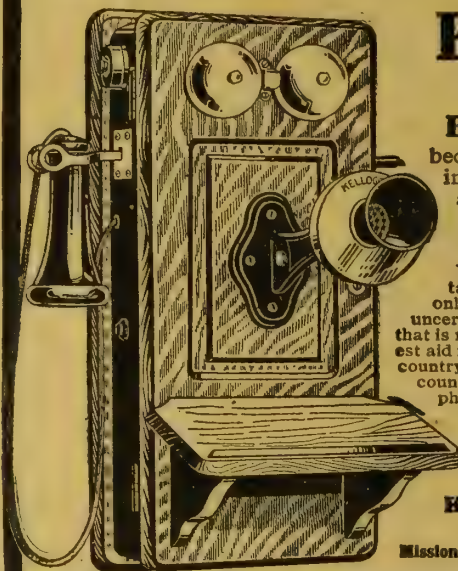
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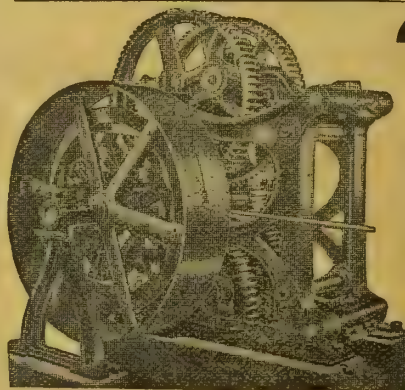
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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

August 26, 1915

SAN FRANCISCO

Some Suggestions for Fighting Frost

See Articles by Messrs. Garthwaite and Adamson on Third Page

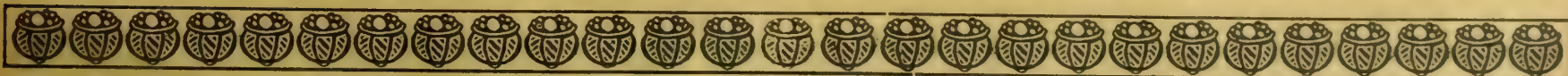


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California Cultivator

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Vol. XLV No. 9

LOS ANGELES: THURSDAY, AUGUST 26, 1915

One Dollar Yearly

Summer Care of Heaters

J. E. Adamson of Pomona Writes for the Cultivator Valuable Suggestions on Caring for Heaters. Their Lives are Short at Best. Good Suggestions for More Efficient Frost Fighting

TWO seasons of mild weather have produced a feeling of ease and safety as regards frost in the minds of the growers of citrus fruit. There is little tendency to talk of frost or the means of prevention, and in some cases there is even the apathy which leads to neglect of the apparatus used in the former fight. Most of the neglect is to be found in cases where the apparatus was not installed until after the troublous times of 1912-13. Growers who made the fight and won are generally still alive to the needs of the situation, and are ready to make as good or a better fight the next time danger comes.

There would seem to be little excuse for the deliberate neglect of heaters. The labor of caring for them is not a serious matter even though the most detailed care is given them. Some growers go to a good deal of unnecessary work, such as scraping out the refuse left in the heaters, burning them out, etc., before painting. If the refuse has a considerable proportion of asphaltum in it this will in a large measure act as a preservative.

Paints of several kinds have been offered the growers under the claim of being fireproof, but most of these have turned out to be a delusion. Practically all of them are based on asphaltum and will either burn off or, after being subjected to high temperatures, will shell off.

There would seem to be no better

paint than heavy crude oil applied hot. It will need renewing each year but will stick well and preserve the sheet iron of the heater until it has been burned several times. I know of one lot of heaters which were emptied and then piled in such a manner that

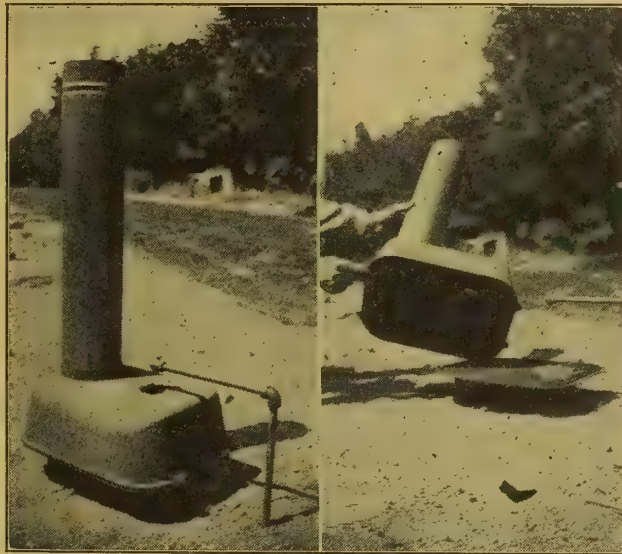
breakage. On our own place we left the heaters in the field last year, but took them in this year and find the cost of taking them up is not greatly in excess of that of setting them back under the trees. There is also the advantage of having the heaters

the stoves, as there is very little tendency to rust deeply on account of the large amount of carbon in the iron. Then also the ideal heater will have the oil fed through pipes and will not be required to be oil tight.

Sheet iron or steel stoves could be used for the pipe system, but would not last long for the reason that sheet steel goes down more rapidly when subjected to high temperatures, as they are in the piped system. The cuts show the cast iron stoves as far as they have been worked out. While in operation the whole stove is red hot, a condition that materially helps the combustion and holds the radiation down near the ground where it will do the most good. It will be noticed that the stove is in two parts, the lower one being a flat plate with legs. The joint being at the bottom no water can accumulate to make trouble when lighting the fires.

The problem seems to be largely a matter of first cost as the cast iron construction calls for a much heavier stove than we are used to. This is offset by the simple form and absence of complications such as dampers, covers, draft tubes, or other items found in the air-tight stoves.

The system commends itself in that there is no oil to care for when the heaters are taken up in the spring and no slopping of oil while filling, as there is no filling to do except at the main tank.



Latest Form of Orchard Heater

the drippings from the upper tiers would flow over the lower ones. Oil was then thrown over the pile several times until the heaters were all well coated. These heaters are three years old and are in good condition, the only loss in that time being caused by

brought under inspection and put in good condition for the next year.

The matter of rapid oxidation of the sheet steel heaters has caused us to look for something more permanent for the heater of the future. This leads us to the use of cast iron for

Early Preparation for Frost Fighting

J. W. Garthwaite of Corona Gives Suggestions of Value in Fitting and Maintaining Frost Fighting Appliances

HAVING placed his order with the manufacturer in the summer for early fall delivery the orchardist will do well to make all his plans for placing his heaters and have everything in readiness when they arrive, because unless the manufacturers have made a very decided change in their methods, the equipment will appear just after the first cold weather and it will seem desirable to rush it from car to field without delay.

In preparing for the placing of heaters the grower should bear in mind that they are constructed of light sheet iron and that rust is their worst enemy. In fact with reasonable care in handling they should last until they have rusted out or until they have been burned through. This last danger can be guarded against by not permitting the heaters to burn dry; under severe weather conditions this

might present practical difficulties, but under no circumstances should it be allowed if possibly avoidable. Delaying of rusting out is merely a matter of care. Dipping in some rust proof material is very useful and important as far as it goes and should be done before the heaters are first put in the field and, if they are stored for the summer, should be done each time they are collected and again before distribution. More important, however, appears the necessity for protecting the bottom of the heater from the damp ground of the orchard. This can be done by setting it on some substantial base. Bases in three forms have come under the notice of the writer. First, a block of concrete large enough to accommodate the heater and about one inch thick. Second, a piece of redwood of similar dimensions, cleated at each end to prevent warping, and dipped in fireproof

paint. Third, a piece of galvanized corrugated iron of fairly heavy gauge. These bases have the added advantage of keeping the heaters level, which is highly important if they are to be filled without spilling or running over. The third form of base permits a circulation of air which is claimed to be beneficial and is virtually indestructible, while the concrete is porous enough to absorb a surprising amount of oil. In the beginning a few growers set their heaters in pans to catch any oil that might be spilled, but when, with the first rains, these filled with water they were discarded.

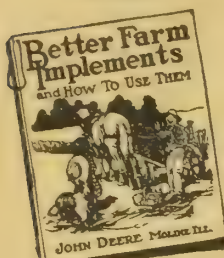
Most of the heaters that are being made at present are provided with some sort of indicator to show the man who is filling when the proper amount of oil has been poured in; if the heater is set level and the mark watched there should be little danger of spilling. Some of the heaters turned

out hurriedly after the freeze of December, 1911, were not provided with any such mark and one of the growers in this district designed a gauge for this purpose. This is made of fairly heavy galvanized wire hooked at one end and bent into the shape of a "T" at the other. The hooked end is hung over the top of the chimney and the whole is of such a length that when the oil is poured into the heater until it touches the "T" end it is within half an inch of running over.

It is usual for the grower to secure sufficient equipment so that in the absence of very severe conditions it is unnecessary to light all of his heaters at any one time. Frequently the system is to light every other heater in each row. When this is done the lighting should be staggered so that each dark square will have lighted squares on all sides. In order to facilitate the carrying out of this plan

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and to avoid confusion where several men are lighting at one time, a very good practice is to paint the tops of half of the heaters, in the proper arrangement, with a good coat of white which can be easily seen in the dark, or if different types of heaters are used they may be arranged in a similar way; the writer alternates one large heater with two small ones. This practice will also be found useful when the filling gang goes into the orchard. The lighting crew may have gone to bed, but if they report that white or black heaters, as the case may be, have been lighted the filling will be much simplified.

After the heaters are all in place the owner may go out some afternoon and light two or three of them to see how they work. He will probably find them perfect; they will light easily and burn well; but when he tries the same thing at a temperature of 30 degrees he will not find it so simple. Then, unless he has a different sort of heater from any that have come under the notice of the

heaters out of orchards and leaving them unpainted and unrolled in the gutter for the summer must be condemned by all careful orchardists; but it is a practice that is far too common.

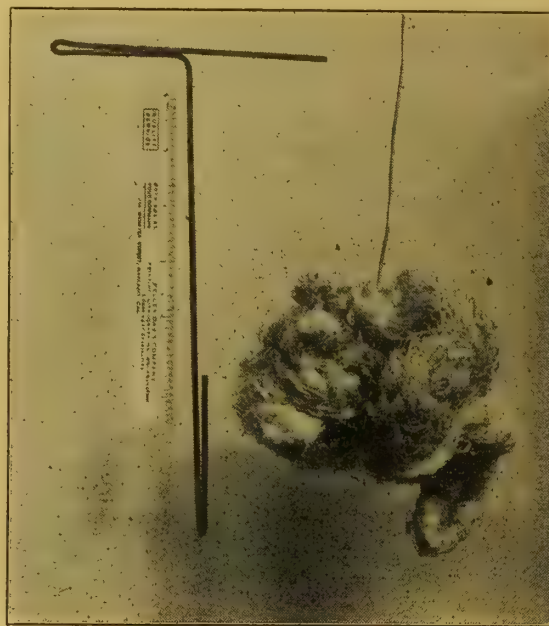
OLIVE COOPERATION

By Mark S. Watson



THE success which has crowned the efforts of the orange growers, once they have united, the raisin growers, united, the almond and walnut growers, united, the farmers within a county or group of counties, united, to say nothing of the similar associations in the northwest states, has been so striking that it can not be missed. In some cases success has not been complete, but in every case it has brought to individuals conditions so much better than they would have found without an association that the lesson is reasonably clear.

Only a short time ago it was brought forcibly to the attention of the olive growers who for recent years have been facing conditions far from satis-



Wire Gauge for Indicating Proper Depth of Oil in Heater and Wick of Cotton Waste for Starting

writer, he will find that without wicks which will burn long enough to warm the oil they will be all but useless. A very satisfactory wick for this purpose is made from a piece of cotton waste somewhat larger than a man's fist. This is attached to a piece of wire and hung from the chimney. The proper placing of the waste is very important: enough of it must be in the oil so that it is always saturated but it must never be wholly submerged or it will not burn at all. Renewal of wicks after the first burning each season is not considered necessary as there is usually enough soot clinging to the wire and sides of the heater to do the work.

After the danger season has passed the question arises as to what is to be done with the heaters for the summer. If one is provided with the necessary storage space and cares to go to the expense of handling it is a very good idea to collect the heaters and store them under cover. Where bases, such as were described above, are in use they may be set level under the trees, and the heaters, after emptying and treating with paint or oil against rust, set upon them. If any oil is left a very careful watch must be kept to see that none is spilled or leaks about the tree. Pickers, pruners and all men working in the trees should be instructed to be particularly careful and report at once any overturned or leaky heaters, as oil even in small quantities is very injurious to plant life. The hauling of

factory. There have been sporadic efforts to organize but none have succeeded. Now comes the California Ripe Olive Association with representatives everywhere in the state and headquarters in San Francisco, near the offices of the president, J. J. Avis, himself a grower. At the Palo Alto convention during the annual session of the State Fruit Growers' Association the needs of the olive growers were briefly set forth by some of the leaders and a few days later the Oroville growers also showed their interest by holding an organization meeting.

The olive situation is a curious one, probably the more curious to the man who has seldom been out of California. He is in the habit of seeing ripe olives on almost every restaurant table and in his own home. He eats them with as little special thought as he eats bread.

This man should have taken his stand somewhere in a metropolitan restaurant this year during the heavy tide of travel from the East. He should have seen the average Easterner when the waiter brought ripe olives to the table, the wary way in which the dark skinned fruit was approached, the added suspicion when it proved softer than the green olive, and the deliberation as to the edible possibilities of the "bad olives." The experience would have taught the Californian something of the East's ignorance of one of California's finest products.

The writer talked with one visitor

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whose California uncle, an olive grower, had sent East last Christmas a small keg of his best ripe fruit, packed with most extraordinary care and had made the fatal mistake of referring to the shipment merely as "California olives." The eastern nephew had opened the keg and looked over the supply.

"Didn't you find them wonderfully good?" he was asked.

"I thought they had rotted!" he said mournfully. "I had never seen black olives before, and besides they were not hard like those we eat. I threw the whole keg away. Knowing what I now know I wonder I wasn't struck by a thunderbolt for that deed."

An extraordinary case? Not particularly. The East eats green olives in good quantities, and of course consumes a good deal of olive oil although not nearly as much as it could consume to good advantage. The olives are considered a luxury, an appetizer, and the food value is not guessed by any but a small minority of dietetic experts.

Green olives have been forced on the Eastern public, green olives from Spain and Italy and southern France. Across the Atlantic the olive does not ripen to any such splendid condition as the California fruit, hence the European growers, able to obtain labor for a few cents a day, urge the olive in the best form for them to ship. The European growers are well organized and the jobbers as well.

A pessimist declared the other day that it is too late for California olive growers to organize. "There is an oversupply already" he said. "There must be, or we wouldn't have all this trouble disposing of our fruit at a profit." It would be difficult for anyone to make a statement farther from the fact. The problem is different, far. There are under cultivation today some 1,300,000 acres of olive land. California's olive orchards occupy some 25,000 acres, not all producing.



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with inferior trees

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Teague Trees

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California's capacity is less than two per cent of world capacity, which does not look like pressing the market. But the point is that the other acreage insofar as it concerns the American market is devoted almost exclusively to the green olive, for the excellent reason that the foreign green olive cannot approach competition with the California fruit. Under normal conditions the ripe fruit should be eaten in many times as great quantity as the green.

Here is a demonstration. If one of ten families should eat a California olive a day the country over, every last California olive would be exhausted and a few thousand families would get none toward the end of the year.

Or here's another. A certain popular cigar is said to be sold to the extent of 1,000,000 a week on the Pacific coast. This takes no thought of other cigars at the same price or others at other prices, or cigarets or pipes. It is the report of one cigar brand. Well if olives should be eaten the country over at that rate, every California olive would be gone early in the autumn of each year.

This would indicate that the problem of disposing of California's olives is not a serious one. "It isn't" contends Mr. Avis. "It is simple if the growers will organize. It should not take much of a campaign to convince the East of something that California already knows, that the ripe olive is the best olive. We will have the help of every physician in the country."

"We are standing today just where the other associations stood years ago, and we know from their experience what they did not know for certain, namely that organization will do for agriculture just what it has done for every other industry. We have one great feat to accomplish, the education of the Eastern public, and while that should not be hard for an organization to accomplish it is altogether too expensive for one grower or packer to undertake."

AVOCADO-AHUACATE

Written for California Cultivator
By Edwin C. Hart, President California Ahuacate Association



IN a recent article in the California Cultivator (August 5), discussing the relative merits of the names avocado and ahuacate, letters from Mr. Lake and Mr. Close of the department of agriculture are quoted, as is also that of Mr. Peter Bisset, plant introducer in charge of foreign plant introduction. The position taken by these gentlemen appears to be that where a name has become "thoroughly established," it should not be changed, even though the name so established is not the original name. It is probable that when a name has become thoroughly established it is impossible to change it even though the name is a corruption of the true name or an entire misnomer. A good example of this is the attempt of the United States department of agriculture to popularize the name pomelo. Conceding that pomelo is the correct and more desirable name, it must be admitted there are comparatively few who are not familiar with the fruit under the name of grape fruit.

Therefore, if the name avocado has been generally and thoroughly established, as seems to be assumed by the writers referred to, it would undoubtedly be useless to attempt to rid ourselves of this undesirable term and substitute the correct one. There seems to be, however, no convincing

evidence that that is the case. The fruit in question is known but slightly throughout the United States, and in the cities where it is marketed is not generally referred to under the name of avocado, but under the name alligator pear. Because a small number of growers of this fruit in Florida have seen fit to adopt a name which is not only historically incorrect but actually misleading to the point of absurdity, we do not think that such usage has "thoroughly established" that name, either in pomological literature or elsewhere. In view of this example, one of several that might be quoted, it is well to avoid overestimating the

effect of the adoption up to this time by the United States department of agriculture of the name avocado.

The name ahuacate has been the name of the fruit since the time of Cortez' invasion of Mexico; prior to that time it was called ahuacatl by the Aztecs. Ahuacate is euphonious, easy to pronounce, impresses itself upon the memory, and is historically correct. Ahuacate is undoubtedly the most commonly used name, considering the world as a whole, and the only name used in 75 per cent of the area in which the fruit is produced.

The term alligator pear has some value because of its peculiarity, which

AWARDED GOLD MEDALS San Francisco 1915

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is obtained by using strong, active, virile nitrogen-producing bacteria that come in FARMOGERM to inoculate your cover crop or alfalfa seed. Extensive government experiments reported an average deposit of 122 lbs. of nitrogen per acre by well-inoculated legumes, besides that taken off in the crop, (equivalent to 1000 lbs. of nitrate of soda), and the Experiment Stations in sixteen States testify that FARMOGERM is a most successful inoculation.

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arouses curiosity and makes it easily remembered, and because it is English. It already has a stronger hold upon the public of the United States than any other name of the fruit it stands for.

Avocado is used only in parts of the United States, together with alligator pear and ahuate. Avocado is the past participle, of the Spanish verb "avocar," meaning "to call up by a superior from an inferior," generally used in times past by a superior judge taking a case out of an inferior judge's court without the necessity of an appeal. The practice is obsolete now and the word has fallen into disuse. The Century dictionary also gives it as a corruption of the Spanish word "abogado," meaning advocate.

There is small reason to doubt that Southern California can produce a better quality and better crop of ahuate than any other considerable section of the United States. We are today doing more experimenting and planting more trees than any other place in the world. We have a great opportunity to legitimately advertise our product as against our only competitor (Florida) by refusing to allow to be forced upon us the corruption avocado in place of the proper and more generally known name ahuate. So far as our experience has shown we are producing a fruit superior to that of Florida, and by sticking to the name ahuate we can make a distinction between our fruit and that of Florida. The name ahuate will serve as our trade mark; and if we stay by our guns and persist, it will not be long before the name ahuate will mean an unusually good alligator pear, and the name avocado a second class product.

The question of name may not seem important, but it is undoubtedly desirable, if not possible in the early stages of an industry or enterprise, to promulgate the true name rather than the corruption. Languages, however, have a capricious way of their own of adding terms regardless of logic and history, and it may be that neither ahuate nor avocado will find a permanent place in our language, but that the establishment of the name ahuate, used by millions of persons where

the fruit is now grown, in connection with the California product has the advantage of furnishing a good trade name, as well as the correct name, is indisputable.

(Ahuate is easy to pronounce and is pleasing to the ear. It is pronounced a-wa-ka-ta, with the accent on the third syllable, the a's in the first three syllables having the sound of a in arm; the final vowel, the sound of a in say.—Editor.)

AVOCADO-AHUACATE

We recently referred to the terms avocado and ahuate, giving correspondence from different members of the United States department of agriculture in which the term "avocado" was given preference. The state experiment station has issued a bulletin on avocados in which the original term has been used. This has caused Mr. Edwin G. Hart, president of the California Ahuate Association, to reply as may be seen in the preceding columns on this page. This association was formed some months ago in Los Angeles and is officered as follows: President, Edwin G. Hart; 1st vice-president, Wm. A. Spinks; 2nd vice-president, Charles Silent; secretary, D. W. Coolidge; treasurer, C. P. Taft; the executive committee consists of F. O. Popenoe, chairman, C. P. Taft, W. L. Rideout; the directors are C. P. Taft, Orange, Joseph Sexton, Goleta, W. A. Spinks, Monrovia, Edwin G. Hart, San Marino, D. W. Coolidge, Pasadena, W. L. Rideout, Whittier, J. Eliot Coit, Berkeley, Charles Silent, Glendora, F. O. Popenoe, Altadena.

Mr. Hart writes regarding this association:

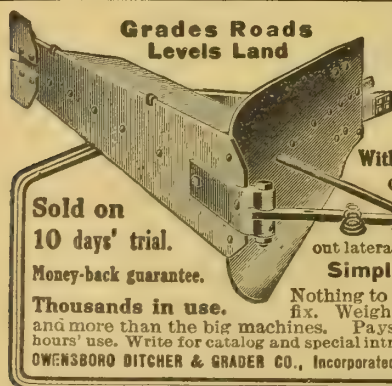
"We expect the association to be of great assistance to all those who are pioneers in the introduction of this new and important industry. Our main work at present will be to furnish our members information that will benefit them in their efforts and to educate the public as to the merits of the ahuate as fast as possible. As an association we are in position to get valuable help both from the state agricultural department and the department at Washington. The membership fee is five dollars."

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A withering look."
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And reading on
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Alphonse dried up
Immediately.

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CALIFORNIA WALNUT PROSPECTS



CIRCULAR is being mailed to the trade by the California Walnut Growers' Association which contains so much valuable information regarding crop and marketing conditions that we quote largely from it:

We have not put out a trade circular sooner this year owing to the fact that up to this time crop prospects have been constantly changing. The original setting of walnuts was the heaviest ever known. The walnut blight, which attacks the growing walnuts generally most severely in May and June and which ruins 90 per cent of all nuts infected, did not develop as early as usual this year but has worked later. The blight has been extremely severe, in some districts ruining over 40 per cent of the crop. The damage to the total California crop is estimated at 22 per cent. We still believe, however, that the shipments for 1915 will be at least as heavy as they were on the last year of good production, 1912, when 12,500 tons left the state. In fact our estimate now is for 13,200 tons. The blight has had no effect on the walnuts which will be shipped under the Diamond Brand as nuts which have been blighted are ruined for commercial shipments and those which are not blighted are in no way affected by this bacteria. Therefore unless an unusually hot spell is encountered between now and harvest time the quality of the shipments will be fully equal to those of last season. We have noticed printed reports in some of the trade journals which undoubtedly originated from sources not well posted or where the contributor was estimating the crop in some particular section only, which might give the impression that the crop is double that of last season. Some of these reports are undoubtedly true as far as certain definite sections of the walnut district are concerned, as some districts will possibly develop double last year's light production, but the California walnut producing district is 175 miles long and we believe the estimates above given will be closely borne out by actual shipment figures. For the last two seasons our final estimates made just prior to naming prices have been within five per cent of actual production, and in both years our estimates were higher than actual deliveries.

Improvements

The California Walnut Growers' Association has spent this year \$12,000 in an effort to improve the quality of Diamond Brand walnuts. At a cost of \$8,000 cash we have secured the license to use a patented method of bleaching walnuts eliminating entirely the use of sulphur. Hereafter no sulphur fumes will be used in bleaching Diamond Brand walnuts. It has been generally conceded that sulphured walnuts become rancid and deteriorate more quickly than unsulphured goods. We want our product to give satisfaction after it is delivered and in the hands of the consumer. We are this year purchasing at a cost of \$4,000 a new set of graders for every one of our twenty packing houses. The screens used in segre-

ating the No. 2's from the No. 1's this year will be made of galvanized iron punched with a steel die, openings slightly larger than the size of the openings heretofore used. We believe that Diamond Brand walnuts will be the only ones graded over a larger opening this season. Obviously this will increase the minimum size of the No. 1 walnuts by allowing the smaller ones to go into the No. 2 grade and will make the maximum size of the No. 2's larger for the same reason, thus improving the appearance of both grades. The crop will develop a larger percentage of No. 2's this year than last year. This will tend of course to decrease the output of No. 1's and increase the output of No. 2's. Thorough sampling tests we have just made in all districts indicate that the crop will average 12 per cent No. 2's against only six per cent last year. Fortunately as the best posted Eastern trade have satisfied themselves that it will be impossible to secure new crop foreign walnuts in time for distribution for the holiday trade, and realizing the necessity of having a supply of cheaper walnuts of good quality for the less particular trade, think our No. 2's will fill this requirement, and increased bookings have recently been coming in freely on this grade.

French Crop Prospects

We have just received the first definite cablegrams from our European agent giving a brief outline of the foreign situation, after making a tour through the Grenoble and Bordeaux districts of France. His advice is that French crops promise good normal yields; that few future sales have as yet been made but these have been at higher prices than last year and for local consumption; that practically no foreign contracts have been entered into; that exportation will be exceedingly difficult and delayed; labor for picking and curing scarce, and that it appears improbable that importations in any preceptible quantity will reach America even for the Christmas trade. As soon as we receive full reports by mail on the foreign situation additional information will be passed to you.

Additional Acreage

The California Walnut Growers' Association this season will ship a larger per cent of the California walnut crop than ever before, having secured much new membership in the old local associations and also the exclusive marketing of the output of the Moorpark Walnut Growers' Association and the Simi Valley Walnut Growers' Association, both located in Ventura County, there being approximately 1500 acres of walnuts in each of the above named associations. The Bishop and the Stow ranches at Santa Barbara, whose outputs have heretofore been marketed through the Johnson Fruit Company of Santa Barbara, have also become members of this association and we will handle their output. The Hemet Walnut Growers' Association of Hemet has also affiliated with us exclusively. There are about 800 acres in this association.

Maturity and Prices

The crop promises to mature about

as early as last season. This will enable us to give every customer his delivery in ample time for distribution for the Thanksgiving trade. Association prices will doubtless be announced towards the last of September and owing to the crop's large volume will undoubtedly be lower than have prevailed in the last two seasons. We hope our figures will be attractive enough to move the entire crop promptly without a carry over. If we can develop such a condition there will doubtless be more than the usual profit in walnuts for every handler and a necessarily larger volume of business must be expected.

STANDARD FOR PACKING AND MARKETING APPLES

The last legislature appropriated \$5,000 for the payment of the cost of printing, traveling and other expenses, together with salaries, of inspectors who shall be appointed by the state commission of horticulture to enforce

California, in any container upon which or the label of which the word 'Standard' is used as the brand or label or any part thereof, or as qualifying the pack, container, or the contents of the container, and to such container.

"Sec. 3. No apples shall be packed, shipped, delivered for shipment, offered for sale or sold, in the state of California, in any container upon which or the label of which the word 'Standard' is used as the brand or label or any part thereof, or as qualifying the pack; container or the contents of the container, unless such apples and such container shall comply with all of the requirements of this act.

"Sec. 4. The following standards for apple boxes and for the packing, labeling and branding of apple boxes to which this act is made applicable, are hereby established:

"(a) The standard container shall be a box of the following dimensions inside measurements, when measured

side of one or both ends thereof, in plain words or figures, and in the English language, the following statement. The number of apples in the box; the style of pack used; the variety of the apples contained, unless the variety be unknown to the packer, in which case the variety shall be stated as 'unknown;' the name and business address of the person, firm, company, organization, or corporation, who first packed, or caused the same to be packed, and, if re-packed, the name and address of the person, firm, company, organization, or corporation re-packed, or caused the same to be re-packed; the name of the locality where said apples were grown; the date when such apples were first packed; if the apples have been re-packed, the date of re-packing; and the stamp hereinafter provided for, canceled as required by the state commissioner of horticulture of California. A variation of three apples more, or less, than the number stated, shall be allowed.

"(d) The apples contained within each box shall be well grown specimens of one variety, hand picked, well colored for the variety, reasonably uniform in size, properly matured, well packed, and practically free from dirt; and shall be free from insect pests, diseases, rot, insect bites, bruises and other defects, except such bruises and defects as are necessarily caused in the operation of packing; provided, however, that a variation from the standard as to insect pests, diseases, rot, insect bites, bruises, and other defects, shall be allowed, not to exceed ten per cent total such defects, nor to exceed three per cent of any one such defect.

"Sec. 5. The state commissioner of horticulture of California shall be charged with the enforcement of the provisions of this act, and for that purpose shall have power:

"(a) To enter and to inspect every place within the state of California where apples are packed, shipped, delivered for shipment, offered for sale

(Continued on page 210)

1.—Turns from one row to another.

2.—Does not pack th soil.

3.—Cheap to opera

4.—Low enough burdened bra

5.—Runs clos

6.—Sand has

7.—1 Man

The Yuba Construction Com-

pany, Dept.

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fornia St., San

Francisco, Cal.

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6 H-P \$104.95; 8 H-P \$139.00; 10 H-P \$173.50; 12 H-P \$208.00;

14 H-P \$242.50; 16 H-P \$277.00; 20 H-P \$359.80. Portable Engines Proportionally Low.

Prices F. O. B. Factory.

Besides lower price, WITTE engines use less fuel per H-P hour—from one-fourth to one-third less—enough saving in a year to pay entire cost of engine. Easy starting; no cranking. Our 25 years engine building makes this higher quality for you, at a small one profit for us. Used for all kinds of work.

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SOME GROWTH OF PEACH TREE

The above shows a peach tree of the "Red Bird" variety planted in January, 1914. The bud was one year old at that time and it was headed back to 28 inches. The photograph was taken in July of this year, at which time the second summer's growth was perhaps half made. The circumference of the trunk at the time of photographing, 15 inches from the ground,

was nine and a half inches and its height 14 feet. The branches have a spread of 15½ feet and the yield of fruit was two-thirds of a bushel, 95 per cent of which was extra fancy stock. The size of the fruit was very uniform, running about eight and three-fourths inches in circumference. The tree was grown on the place of Mr. A. D. Nichols, Riverside, and the photograph was made by Mr. Avery E. Field, also of Riverside.

without distention of its parts: "Depth of end, 10½ inches; width of end 11½ inches; length of box, 18 inches; and having a cubical content of as nearly as possible, 2,173½ cubic inches; provided, that a smaller box may be used if plainly marked on one side and on the labeled or branded end with the words 'short box.'

"(b) No statement, design, or device, appearing upon any box within which apples are contained, or upon the brand, or lining thereof, or upon the wrapping of any apple, or upon any sign, or placard used in connection therewith, and having reference to or regarding the box or the apples contained therein, shall be false or misleading in any particular.

"(c) Every box, within which apples are contained, shall bear upon the out-

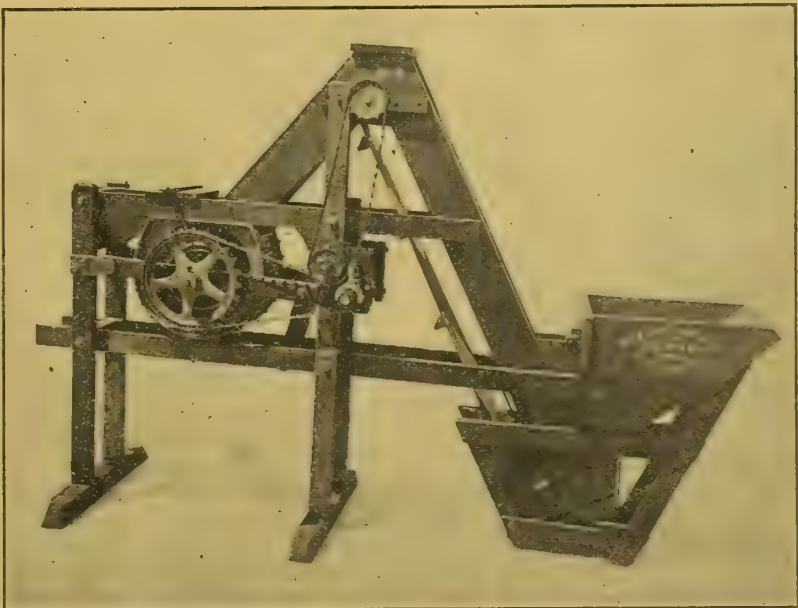
the standard apple act of 1915. This bill was passed by the legislature and approved by the governor on June 10, 1915. The attorney general has ruled that this law applies only to interstate shipments. It is:

"An act to establish a standard for the packing and marketing of apples, fixing penalties for the violation of its provisions, and providing for its enforcement and making an appropriation to carry into effect the provisions, which are:

"Section 1. This act shall be known, and for any and all purposes may be referred to, as 'The standard apple act of 1915.'

"Sec. 2. The provisions of this act shall be applicable to all apples packed, shipped, delivered for shipment, offered for sale or sold in the state of

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1c IS WORTH DOLLARS



when you invest that 1c in a postal card to us. Here are a few of the good things in it for YOU.

1 1/2 H-P. \$24.75 5 H-P. \$37.50
 2 H-P. 28.75 6 H-P. 35.75
 3 H-P. 33.00 8 H-P. 43.50
 4 H-P. 38.00 10 H-P. 47.50
 12 1/2 H-P. \$214.50

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The Lawn and Flower Garden

OLD GARDEN LORE

Written for the California Cultivator
 By Ernest Branton



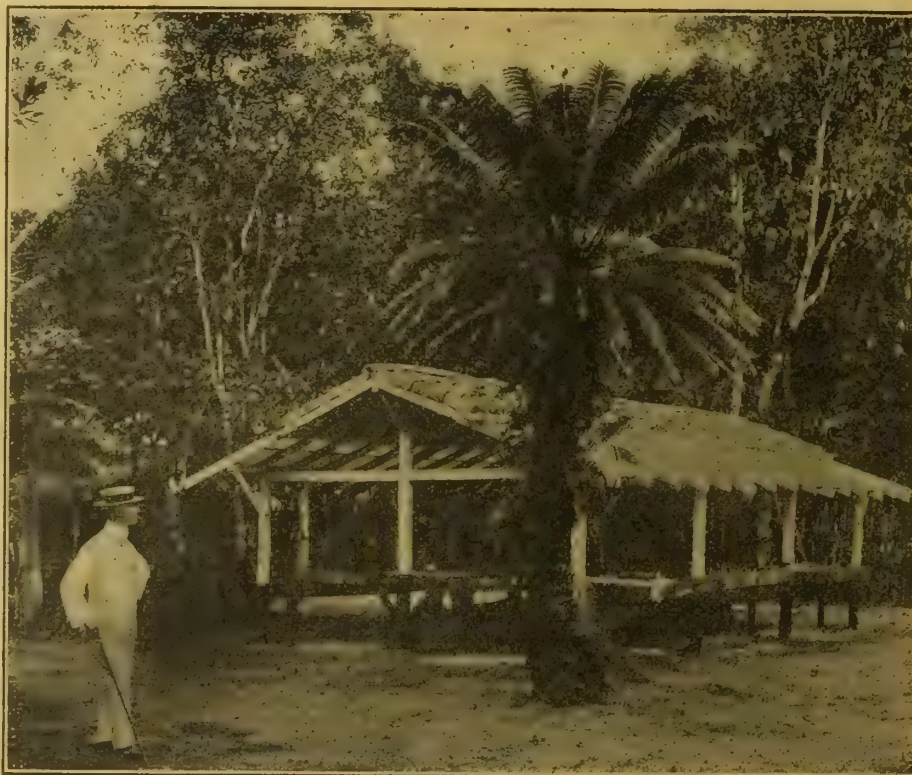
OLD garden literature has always held a peculiar charm for me and I never lose a chance to secure old books, pamphlets, etc., of this class, even reprints are almost sacred if the subject matter dates back some centuries.

In reprints from Gerarde's quaint old Herbal of 1597 may be found some very curious descriptions and lists of uses of plants then new and rare, but now common everywhere. Of our Indian corn, then known as Turkey wheat, he says:

"Turkey wheate doth nourish far less than either wheate, rie, barley or

Chrysanthemum Care

The care to be given chrysanthemums at this time is considerable if one is to have fine flowers. No more cultivation should be given. The ground should be ridged or basined so that water will be certain to reach plant roots in liberal volume or failure of flower crop will result. It is hardly possible to give the plants too much water from now on until flowers are picked, and one may safely water at any time of day or night. Do not be afraid to sprinkle the whole plant even on the hottest day. If possible mulch all plants with stable manure; it matters little how much one uses if fresh manure is not put against the stem of the plant. A heavy supply of plant food is needed until the first bud shows



In the Tropics.

otes. The bread which is made thereof is meanly white; it is hard and dry as bisket is, and hath in it no clamminus at all, and for which cause it is of hard digestion, and yieldeth to the body little or no nourishment. We have as yet no certaine proore or experience concerning the virtues of this kind of corn, although the barbarous Indians which know no better, are constrained to make a virtue of necessitie, and think it a good foode; whereas we may easily judge that it nourisheth but little, and is of hard and evil digestion, a more convenient foode for swine than for men."

Of garden radishes he says: "Radish are eaten raw with bread instead of other foode; but being eaten after that manner, they yield very little nourishment, and that faultie and ill. But for the most part, they are used as a sawce with meats to procure appetite, and in that sort they engender blood less faultie, than eaten alone or with bread onely; but seeing they are of harder digestion, they are also many times troublesome to the stomacke; nevertheless, they serve to distribute and disperse the nourishment, especially taken after meate, and taken before meate, they cause belching, and overthrow the stomacke."

color, when all feeding should cease. Keep plants well staked and tied, also thoroughly disbudded and clear of side growths and crown suckers.

A Dark Rose Needed

While rose hybridizers are devoting so much time to the production of new tints in roses it may be well to remind them that California needs a good dark rose of the Black Prince or Camille de Rohan type. Both of those named are unsatisfactory over a large part of this state, though we have none better than these two old-timers. It is high time we had some new ones that will thrive in the exacting climate (for roses) of the southern end of the state.

Compost Heaps

In cities the gardener too seldom has room for a compost heap for one must remain in place for a whole year after the last material is added before it is fit to use and it will be available then only when it has been thoroughly wetted at frequent intervals. In rural districts more space is generally available and compost heaps may be kept out of the garden proper. For the best soil for ferns, begonias and many other plants we must either insure the decay of quantities of vegetable matter or hike to the foothills and canyons for

leaf-mold. Good ferns may not be permanently had except such material is to some extent mixed with the soil.

The Least Resistance

Very often I see garden owners year after year hanging on to some plant that will never thrive with them. Why work so hard against natural forces? So much misplaced care is given rose bushes of weakly habit or constantly attacked by mildew. If you find some sorts are so subject to this fungus that fine blossoms cannot be grown, throw all such bushes away and get others. The fact that you have rose bushes free from mildew proves there are others also free. If all in a varied collection are attacked it clearly indicates that the care-taker is at least partly to blame or, as our legal friends say: guilty of contributory negligence. When fighting mildew use preventive rather than curative measures. The ounce of prevention rule most heavily applies to war against mildew.

A Shade Flower

Wish't somebody would go into a shaded, watered canyon, pick some seeds from ripened heads of what looks like a clear yellow sunflower with light-green foliage and then plant these seeds when rains come, on a very shady side of the house. The plant belongs to the sunflower family yet will not grow in the sun, therefore is

a shade flower. Let us call it by this name for it has no popular name in local circles and botanists know it as *Venegasia carpesioides*. I first saw it well up in Laurel Canyon, Hollywood; next in Griffith Park. It is not common anywhere and is not a coarse plant or flower but one of delicate beauty when compared with the common wild sunflower.

The Best Rose

In the midst of many claimants what shall we say when asked what is the one best rose for the southern end of California? It will not do to name a new and untried one; neither one that is strong only when budded upon a more vigorous stock. What is desired is the name of a rose that with average care, in average soil, will produce a full crop of good blossoms over a fairly long season and that may be grown upon its own roots by all who wish to raise them from cuttings. Such a rose is Kaiserin Augusta Victoria and the writer knows of none superior to it in the essential points herein outlined. Who has a better one to champion?

Digging Gladiolus

Several have asked me of late when comes the proper time to dig bulbs of gladioli. When the tops begin to turn brown on the edges the bulb is ripe; no need to wait for it to die. Cut top off three inches above bulb, store latter in dry, cool place until at least January, that being one of the best months for planting.



ON THE MARINA AT THE EXPOSITION JUST BEFORE THE ASCENT OF THE AVIATOR

THIS WEEK AT THE EXPOSITION

TOMORROW, Friday, is Southern California Counties' Day. Saturday is California High School Day. The Single Taxers are just ending their convention, and this is also Lawyers' Week.

The California State Veterinary Association meets on August 30 and holds sessions until September 3.

The principal event in connection with the exposition this week is the meeting of the Society for Horticultural Science. It is to be held at the University of California, across the bay, but of course the exposition is one of the principal "exhibits" which will be used by this great society.

The sessions will be held at 9:30 a. m., 1:30 p. m. and at 8 p. m., in a hall to be designated later, in the agricultural department of the University, to which the general public is cordially invited. Side trips will be made to the fruit and vegetable growing sections of Santa Clara, Alameda, Contra Costa and Marin Counties. Arrangements for these trips will be made after the convention starts.

The American Pomological Society convenes in Berkeley September 1, 2 and 3. The Eastern delegates to this convention are in California at this writing, observing orchard practices and packing methods in Southern California.

The Eucalyptus Hardwood Association holds its meeting September 8.

Perhaps most important of all the congresses, from the standpoint of arid America at least, is the International Irrigation Congress which will hold several sessions in California: at Stockton September 13, 14; Fresno, 15, 16; Sacramento, 17, 18; San Francisco, September 20.

SIGNS OF THE NEW AGRICULTURAL ERA

By Leonard Carpenter

The farmer's business is the last great industry to feel the real effects of the era which started with the invention of the steam engine, but if the exhibits which have been made at the Panama-Pacific International Exposition are taken as an indication the revolution of methods within the next few years is going to be tremendous.

A few minutes' stroll through the seven and a half acres of the Palace of Agriculture will do more to open the eyes of people generally, and farmers especially, to the possibilities of power on the farm than any other method.

There is very little about the exposition, now being visited by tens of thousands every day, at San Francisco of an historical value, for it has been the intent of the directors to make the showings as nearly contemporaneous as possible. There are however some exceptions to the rule, and one of them is to be found in the Massachusetts space where is shown the plow with which Daniel Webster was wont to turn the soil on his father's farm near Marshfield. The Websters have discarded the dog-fish skin which was usually stretched tightly over the mould-board of the plow and have substituted iron strips. Except for these strips the plow is entirely made of wood. With a coat of paint, however, it might readily pass for a plow of twenty years ago instead of one more than a hundred years old.

Between the Webster plow and the steel plow of today there is not a great deal of difference. Between the oxen which he used and the horses which the modern farmer used there is even less difference. Any tool has been good enough for the farmer and while year after year has found the less efficient machines in most branches of

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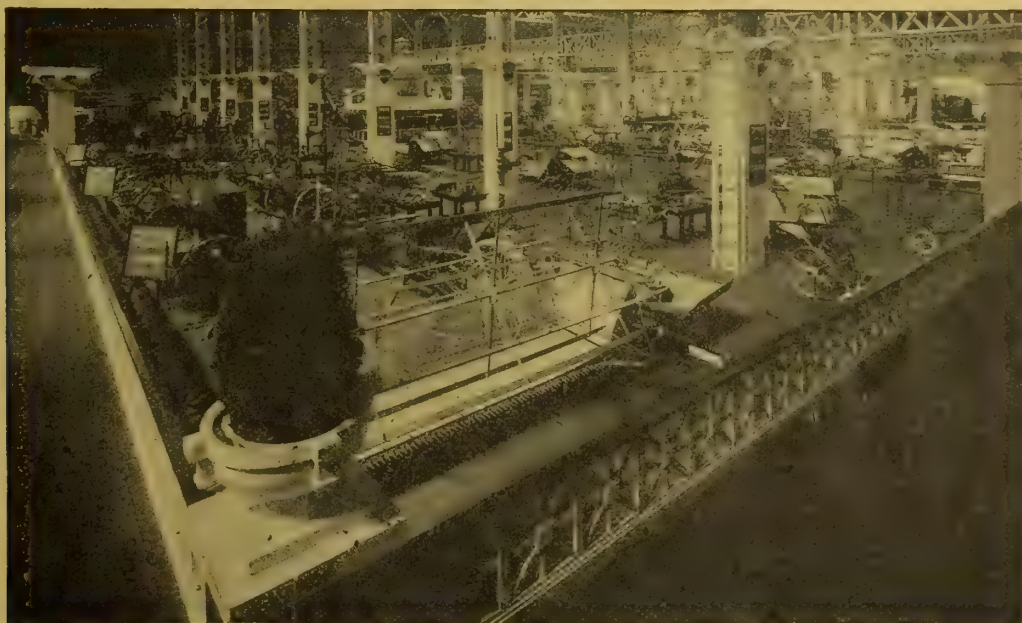
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industry forced into the scrap heap by better machines in this one basic business the tools of the father have descended to the son.

The Tule River Citrus Association has purchased a fumigating outfit and will do its own work.



A view showing about one-fourth of the great International Harvester exhibit. The pergola entranceway down the aisle at the left is at the center of the south boundary of the exhibit. The entranceway to the right is at the center of the boundary. The model farm centerpiece may be seen in the distance.



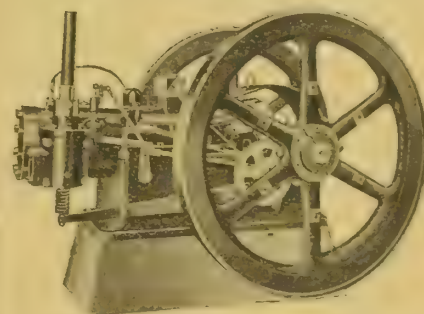
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General Agriculture



POTATO CERTIFICATION



AS THERE is so much interest in the movement for certified potatoes we quote Assembly Bill No. 1573 which was enacted by the last session of the state legislature. It is entitled:

"An act to establish a standard for California certified seed potatoes and to prevent the sale of other potatoes as California certified seed potatoes, making the violation of this act a misdemeanor and fixing a penalty therefor."

Section 1. No potatoes shall be sold in the state of California as California certified seed potatoes except those which have been inspected and certified to in accordance with the following requirements:

(a) The growing potato crop shall be inspected by an inspector who shall be appointed in accordance with the provisions of section three once during the blooming period of the plants and again as the plants begin to mature, but before 40 per cent of the plants are dead. A third inspection shall be made after the crop has been harvested and graded.

(b) Potato fields showing a mixture of more than 250 hills per acre with any other variety or varieties, or showing more than 500 weak hills, or more than 50 hills affected with black-leg (*Bacillus phytophthorus* Appel) shall be disqualified for certification, unless such mixed and weak or diseased hills shall be removed from the fields at this time under the supervision of the inspector.

(c) At the time of the second inspection the inspector shall dig, or cause to be dug under his supervision, and weigh at least 100 hills per acre, and if five per cent of the hills so dug shall each weigh less than 30 per cent of the weight of an average hill, the crop shall be disqualified for certification.

(d) After the crop has been graded it shall be inspected and shall meet the following requirements:

The selected potatoes after being graded shall be free from any infestation of eelworms (*Heterodera radiciola*), larva of tuber moth (*Phthorimoea operculella* Zeller), or infection of wart disease (*synchytrium endobioticum* Perc.) or powdery scab (*Spongospora solani* Brunch.), and shall be practically free from net necrosis or infection of late blight (*Phytophthora infestans* De By.). They shall be in the judgment of the inspector free from serious infection of scab (*Oospora scabies* Thax.) or Rhizoctonia, with not over five per cent light infection of scab (*Oospora scabies* Thax.) or ten per cent light infection of Rhizoctonia. They shall not contain more than eight per cent light infection of wilt diseases (*Fusarium oxysporum* or *Verticillium albo-atrum* Reink. and Berth.), and not over two per cent of deep infection of wilt (*Fusarium oxysporum* or *Verticillium albo-atrum* Reink. and Berth.) They shall also be free from any mixture of colors or distinct types, and shall be reasonably sound and free from cuts or bruises or second growth, and shall conform in shape to the

varietal type. Not over five per cent of the tubers shall weigh less than one and three-fourths ounces and not over five per cent shall weigh more than twelve ounces.

Sec. 2. The owner of potatoes which meet the requirements as stated in section one of this act shall be given by the inspector at the time of making the last inspection a certificate stating that such potatoes have been inspected by him in accordance with the provisions of this act and that they meet all the requirements as California certified seed potatoes. All potatoes sold as California certified seed potatoes shall bear on the package or container the certificate of inspection, which shall state the net weight of contents at time of packing, the date of inspection, and the date of packing. The inspector shall determine the weight of the potatoes which have passed inspection and are eligible for certification and shall only issue to the grower sufficient certificates to label this amount of seed.

Sec. 3. The matter of inspection shall be in charge of the state commissioner of horticulture, and the cost of inspection shall be borne by the grower of the potatoes inspected.

Sec. 4. Any one who shall violate any of the provisions of this act shall upon conviction be deemed guilty of a misdemeanor, and shall be punished as provided in section 19 of the Penal Code.

POTATO CONVENTIONS

Regarding the troubles which are now confronting the potato grower and the necessity of securing better seed Commissioner Cook writes:

"I learned a year ago or more that potatoes were very rapidly declining in yield and quality, that the cause was mainly fungoid diseases, and that with proper care and education the difficulties could be met. This is the reason we are taking so much pains to educate the people. This is why we are to hold the potato conventions at Bakersfield, Tuesday, September 14; El Monte, Los Angeles County, September 16; Perris, Riverside County, September 17; Salinas, Monterey County, September 20; Stockton, San Joaquin County, September 23.

"We hope to make it possible to secure sound seed in our own state at no distant day. This will secure two valuable assets: better yield and non-poisoning of the soil which results from planting diseased seed. This poisoning lasts for a number of years, possibly six or eight, so you see it is a matter of great importance.

"The law is not mandatory. People can act or not as they desire, but they cannot label their potatoes "certified seed" except they comply with the law, in which case the growing of the seed and the seed itself after digging will be thoroughly inspected by competent men. This has been the rule for some time in Maine, Michigan, Wisconsin, etc., and they have found that it has served them excellently well. We must fall into line."

One may love the friend whose faults he points out, but there are several more effective ways to prove it.

POTATO CAMPAIGN

The decline of the yield of potatoes to one-fifth that of five years ago in most of the potato growing sections of California is both startling and alarming. The cause is well known by the few. It is fungous attack. Methods to destroy these fungi are known. Disease-free seed is scarce and difficult to procure. Certified seed, known to be sound, brings from two to five times that which has not been inspected and so is very likely infected with disease germs. It follows that education regarding these handicaps to successful potato production is a vital need of our potato growers. This has led to the following schedule of potato meetings in September: Bakersfield, Kern County, September 14; El Monte, Los Angeles County, September 16; Perris, Riverside County, September 17; Salinas, Monterey County, September 20; and Stockton, San Joaquin County (meeting of the West Coast Potato Association) Thursday, September 23. Education along these lines means thousands of dollars to our state and to the potato growers.

W. N. Shear, of the United States department of agriculture, and A. J. Cook, state commissioner of horticulture, will address each of these meetings. Full discussion by the growers present will be a valuable feature of each conference. Any effort to secure large attendance of those interested at these meetings by growers, county commissioners, and by the press will be greatly appreciated.

KEEP UP THE PRESSURE

"Often one hears the argument that heat causes expansion of the air in a tire sufficient to produce a blow-out," says P. W. Litchfield, factory manager, The Goodyear Tire & Rubber Co. "Many motorists thus excuse their habit of running tires under-inflated. Even experienced garage men advise that tires be run at 15 to 20 pounds lower pressure in hot weather. We have to admit, of course, that heat does expand air and raises the pressure in a tire, but in its practical effect the rise in temperature is insufficient to cause even the slightest danger.

"To satisfy ourselves on this point we recently made an unusually severe test, using a runabout equipped with 33x4 tires. We selected a day, which according to the local records was the hottest June day ever recorded. The tires were pumped up to 80 pounds with the car standing in the cool of the garage. It was driven intermittently for about an hour, and when not running was allowed to stand in the sun. Then it was taken for a spin at 40 miles an hour over brick and tarred wood-block pavements. On measuring the pressure we found it had increased just four pounds.

"As far as the welfare of the tire is concerned a difference of four pounds is really no difference at all. Tires are now built with such a high factor of safety that an increase in pressure of many times four pounds would not cause a blowout unless already ruined by overloading and under-inflation. We have often inflated up to 300 pounds without any damage to the tire.

"The most serious variation in tire pressure is caused by leakage. Rubber is to a small degree porous and will allow air under pressure to leak through it. A certain amount of leakage through both tube and valve is normal and to be expected. Your pressure may maintain itself for a considerable time, but it is never safe to

count on it. You cannot put it too strong that under-inflation, not over-inflation, is the condition to guard against."

WHAT GOOD THINKING CAN DO

Every day are the brain-proud American farmers being taught simple, homely, and mighty forcible lessons in farming by the farm peasantry of Europe. Wisconsin holds a lot of such experience. The old New England, New York, and Ohio farmers, who first took up these new fine Wisconsin lands, proved most reckless forgetters of the simple truths of soil preservation. They farmed these lands to grain for 30 to 40 years, until they would no longer return a profit; then they sold them to a German or Scandinavian farm peasant who knew but little out of the book but had been well schooled back in the fatherland to wise handling of the soil. It took only a few years to show a wonderful change in the productivity of these soils. Today, under the influence of live stock farming in the form of dairying, these old lands range in value from \$150 to \$250 per acre. The real science of the thing was worked out by the intelligent owners and managers of the big estates on which the European farm peasants learned the lessons of wise farm practice.

H. W. Collingwood, the able editor of the Rural New Yorker, is writing a series of readable articles for The Country Life. It is good to read the experience and well grounded conclusions of this great student of the soil. Here is an extract which tells the story of many a noble old farm in the east and middle west:

"Down in Delaware I had seen an old, wasted, slave plantation come back to fertility. Most of us have let the historians do all the thinking and reasoning for us so that we have come to believe that in New England and the Middle West are the sections which show the real miracles of history. As a matter of fact, the sands of the Delaware peninsula have their marvels to relate. I have heard of an old mansion, the pride of a great estate from the earliest Calverts through generations of proud slave holders until the war left it with one shattered soldier and his frail daughter. With the scattering of slave labor this farm went back to a sand heap and became a loafer farm of scrub oak and melancholy pines. The last lady of this long line of aristocracy died, and this proud estate is said to have passed to a colony of poor Russian Jews, who are bringing the farm back with crimson clover, cowpeas, and lime, until it is more productive than ever before.

"It is one of the wonders of this land of freedom that human society can turn such somersaults and land upon its feet. The poor Jew, crushed down by generations of oppression, steps into the place of the proud master and does so because he is able to force the abandoned land into the task of making itself over. There is no stronger method by which a race or broken down family can redeem itself more thoroughly than by fighting the battle which saves a farm and brings it back into productive life."

ANOTHER ON US

An Easterner who had bought a farm in California had heard of his neighbor's talent for raising large potatoes, so sent his farm hand over to get a hundred pounds. "You go back home," answered the talented farmer to the messenger, "and tell your boss that I won't cut a potato for anyone!"—Everybody's Magazine.

TAKE CARE OF FARM TOOLS

Entirely too many people take no care of farm tools and farm implements. The waste from this source amounts to thousands of dollars every year. The self binder or header remains in the harvest field where it was last used; the cultivator is put in the corner of the corn or kafir field; the drill, the hay rake, and the harrow with many other pieces of farm machinery are drawn up against the barnyard fence at the close of the season and left there exposed to the weather all winter and spring until needed for the next crop.

The annual depreciation of farm machinery should not exceed ten per cent, but on many farms it often amounts to 50 per cent or more. Every farmer can save hundreds of dollars by having a good machinery shed in which all tools and implements can be stored when not in use.

Wagons and buggies when not in use always should be placed under shelter. Planters, cultivators, plows, harvesters and all machinery when left in the fields at the close of every day's work should be covered with a water-proof tarpaulin or covering that will protect the machinery from wind, dust, rain and other deteriorating influences. At the close of the season the machinery should be well oiled and put into thorough repair for the next year's crop, and then placed in

the machinery shed. The life of the wood work of the machinery will be prolonged greatly if given at least one good coat of paint every year. Plow shares, mold boards, cultivator shovels, sickles and sickle bars and the like should be given a good coating of axle grease or neat's foot oil.

A good piano often lasts a lifetime because of the excellent care we take of such an instrument. If we were to leave it out in the rain and weather in the back yard it would be ruined in a short time and the neighbors would think that the owner was a fit subject for the insane asylum. Yet that is exactly what most farmers do with some of their most expensive machinery. Give the farm tools and farm implements the same care that is given the piano and they will last a lifetime.—Oklahoma Farmer.

CALIFORNIA

California, Its Resources and Possibilities, or the annual report of the California Development Board for the year 1914, is just from the press and is being mailed to all who may request it. We doubt not if a letter is written to the office of the board at the Ferry Building, San Francisco, the booklet will be mailed to Eastern people who may be looking for information as to California opportunities. There are many tables as to productions of the state and an excellent map showing counties, railway and steamship lines.

SHIFTLESSNESS ON THE AMERICAN FARM

Foreigners cannot understand our methods of haphazard farming. The foreigner that comes here and goes to farming practices no such prodigal methods as we natives do. He keeps his farm as clean as a kitchen floor and husbands what he owns as though it were of his own blood.

The average American farmer is too apt to defer painting his outbuildings when they require it, or to keep them in repair. As a result old ramshackle buildings, fit only as fire traps and breeding places for rats and vermin, grace many of our farms. To let an old barn or other outbuilding stand decaying until it falls from its own weight is a crime. It teaches growing generations to be slothful and at the same time valuable ground space that might be put to profitable use is permitted to go to waste.—Farm Engineering.

ARE YOU ONE?

The requirements of a good farmer are at least four:

The ability to make a full and comfortable living from the land.

To rear a family carefully and well.

To be of good service to the community.

To leave the farm more productive than it was when he took it.—L. H. Bailey.

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—Made of sugar pine, with three lower panels and fitted with galvanized screen wire. A door that will stand lots of use; our price. \$1.40

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—Inside doors of best sugar pine, 5 panel Colonial and 5 panel O. G., styles a big lot of them, in all sizes.



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D Handle, Square Point Shovels, per doz. \$4.15 or 50c each

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the square with its patrons. Mr. F.
W. King, who has been at the head of
the concern for years, has decided to
retire and close up this large business.
We doubt not there will be many a
farmer in California who will regret
to see this old-time firm terminate its
business-career.

HONOR DUE

In placing a caption over the
beautiful road scene on the cover of
the Cultivator of August 12 we spoke
of it as one of Los Angeles County's
good roads. This was an error. We
should have said that it was a view
of the famous Magnolia Drive between
Riverside and Corona in Riverside
County. We hope soon to give other
scenes showing more of Riverside
County's good roads.

VETERINARIANS

The New York state veterinary
college is sending out its report filled
with information as to the pathologi-
cal side of the live stock industry.
New York maintains a state veterinary
college in connection with Cornell
University. This report is too volu-
minous to even make reference to the
various features of work carried on
in New York state, but we may be per-
mitted to refer to the fact that the
recent outbreak of foot and mouth
disease in this country has shown the
necessity for a more exact knowledge
of animal diseases. Gasoline will not
displace the animal industry of the

United States; it will increase as the
country grows. May we have more of
such institutions as that of Cornell,
and that connected with our own state
university or rather may we have more
and better men graduate from them.

PROCEEDINGS OF CONVENTION

We referred last week to the val-
uable report of the State Fruit Grow-
ers' Convention which we have in this
office for any of our subscribers who
may wish to call for it. Since then
we have received request for copies to
be mailed. The mailing is not done
from this office, the copies which we
have being only for those who call
for them. Those who wish to receive
copies through the mail should send
request directly to A. J. Cook, state
horticultural commissioner, Sacra-
mento.

ONE EFFECT OF THE WAR

Great steel works, ammunition
and auto truck factories of various
Eastern states have received a won-
derful amount of business and profit
because of the war in Europe. Most
of the rest of us, unless it be the
wheat growers, are receiving quite the
reverse. As one indication we may
mention that the exports of American
agricultural implements during the
fiscal year ending July 1, 1915, totaled
about \$10,000,000, while those of the
year preceding were \$40,600,000. It
will probably be many years before
the \$40,000,000 exports of agricultural
implements will be reached again, for
should the war end today, the recon-
struction period will occupy months
and years, and during that time the
money to pay for American agricul-
tural implements will be limited. To
show that this is almost entirely the
result of the war we may state that
European Russia during the past year
imported \$83,000 worth of farm im-
plements; the preceding year she im-
ported \$6,438,000 worth. France did
better; she received during the last
year \$1,153,000 worth, and the preced-
ing year, \$3,884,000. Germany shows
the greatest falling off. During the
past year we exported to her less than
\$20,000 worth of implements while the
preceding year she required \$3,132,000
worth.

GREAT CONVENIENCE

It is a common expression,
"The auto has brought the farm homes
much nearer to the town and to the
pleasures which come through the
more densely inhabited sections." Not-
withstanding our knowledge of the
convenience of this modern vehicle
we were not prepared for the shock
when a neighbor informed us recently
that he left his home between Los An-
geles and Pasadena at eight o'clock in
the morning with two passengers. He
went to San Diego and out to the ex-
position grounds, spending two hours
there, then drove over to Coronado
and took a dip in the surf, had lun-
cheon and returned home to Los An-
geles and was in bed by eleven
o'clock.

The distance from Los Angeles is
about 130 miles, but the speedometer
indicated about 300 for the round trip.
We grant that but few of the more
careful drivers would have made such
distances and seen so much, but this
feat indicates a bit of the pleasure
that may be had through auto owner-
ship. To have driven this distance
with the ordinary ranch team would
have required a week at least, yet this
trip accomplished on a Sunday per-
mitted the driver to appear at his

desk on Monday morning, ready for
duty excepting a bit of soreness in
ribs and arms. Truly, the auto has
materially lessened the size of the
earth.

35 CENT DOLLAR

To the many whose peaches
are being fed to the hogs there occurs
an inquiry as to the quotations on
peaches and other fruits on the last
two pages of the Cultivator, peaches
being quoted at from 50 cents to a
dollar for small lug boxes. These
look like fairly good prices, and in-
deed they are and practically the
same prices as prevailed last year
when peaches had more real value.
In other words, the consumer is pay-
ing today (where he is securing his
goods through the usual channels of
trade) practically the same that he
did two or three years ago. As the
wholesaler and retailer will express
it "This is certainly true for we are
charging the consumer for our serv-
ices as much as we are for the goods
he consumes." As a matter of fact
at the present time they are charging
vastly more. Mr. Stafford of Los An-
geles, a subscriber who has a few acres
of miscellaneous fruits in the out-
skirts of the city and who is able
to take his fruit directly to the mar-
ket, gives the following prices re-
ceived by him for his fruit delivered:
August 6, two boxes peaches 25 cents
each; Satsuma plums, 30 cents. Au-
gust 10, four boxes peaches 25 cents
each; two Damson plums 35 cents.
August 12, two boxes plums 32½ cents
each; two boxes peaches 20 cents
each; or a total for the 14 boxes of
\$3.85 from which commission was de-
ducted, leaving only \$2.45. In this
case there was no freight, but con-
sidering the three deliveries, cost of
raising and picking, how much was left
for net profit? Mr. Stafford concludes
that the only salvation of the small
fruit grower is cooperation. With
one selling head it will be possible to
secure for each grower at nominal
cost a far better return. At present
he is not receiving by any means even
one-third of the consumer's dollar.

THE POWER OF CREDIT

In an address made by David
Lubin before the Cincinnati chamber
of commerce he said in part: "Some
two years ago when the American
Commission was at Nieweid, a town
several hours from Coblenz on the
Rhein, there was a celebration com-
memorating the life of one of the
founders of rural credit in Germany,
Father Reiffeisen, and the committee
of arrangements asked me to speak in
the name of the American Commis-
sion. I did so by stating that in my
opinion there was one nation among
the great powers that possessed great-
er resisting force; that would when
put to the test transcend the strength
and endurance of all the other powers
that might be brought to bear against
it—that this power was Germany. A
close study will show that the real
strength of the German nation came
as a result of her landwirtschaftsrat
system of scientific distribution of her
agricultural products and her efficient
and effective systems of rural credit,
especially her landschaft system of
rural credit. It was these two sys-
tems that enabled the farmers of Ger-
many to see, hear and walk within the
field of commercial experience as radi-
cally and normally as those engaged
in financial and commercial projects
in the cities. This is the cause that
made Germany strong."

Now we are told that Germany is not
only conducting a great war but is
keeping up improvement of her water-
ways and even extending her railway
systems. Prussia, which is only a
little more than twice the area of the
state of California, has spent \$130,000
on her waterways and in her state-
owned railways has in excess of
\$2,225,000,000 invested. In other
words, Germany has become great
because of building up and car-
ing for its own. Here is a great les-
son for America which is ably touched
upon in "National Defense, the Pa-
triotism of Peace," by George H. Max-
well. We will touch upon this book
and the suggestions of Mr. Maxwell
in next week's Cultivator.

Agricultural Notes

According to a list issued by the
agricultural societies' branch of the
department of agriculture of Ontario,
Canada, 308 fairs are to be held in the
province the coming fall.

An Eastern farmers' club has been
discussing the question of what kind
of phosphoric acid a man has to eat
in order to give him what is called a
"bonehead." The decision is that the
bonehead seems to belong to the one
who does not use any phosphoric acid.

The department of agriculture,
which has been investigating the pro-
cess of pasteurizing milk in bulk and
bottling while hot in hot steamed bot-
tles, has found that the new process
eliminates danger of bottle infection,
with the further advantage of saving
in loss of milk by evaporation over the
old method.

The harvest of winter wheat in
European Russia is forecasted at
301,508,000 bushels by the Interna-
tional Institute of Agriculture at
Rome; rye at 941,736,000 bushels.
These are increases over last year of
40.3 and 19.6 per cent, respectively.
The figures refer to all European
Russia, except Poland.

The American Chamber of Com-
merce of China has been organized at
Shanghai to affiliate with the Chamber
of Commerce of the United States, in
particular, and with other commercial
organizations in general. Provision is
made for admission to membership of
all Americans engaged in business, in-
cluding those employed by foreign
firms that promote American trade.

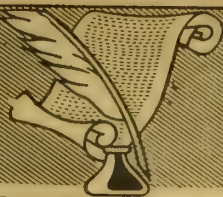
"Fairs for Farmers, Not Fakers," is
becoming the slogan of many Eastern
county and local fairs. It has become
the practice the United States over
to turn agricultural fairs into vaude-
ville, this under the claim that the
vaudeville stunts are necessary to se-
cure attendance. We do not believe it
and are glad to see that many mana-
gers of Eastern agricultural fairs are
likewise skeptical.

The department of agriculture has
been making investigations as to the
variation in yield of sugar beets.
They find that the yield in the United
States is lower than that of any other
beet producing country excepting Rus-
sia. The average in Germany is 14.84
tons, in Russia 8.93 and in the United
States 10.17, yet there are many grow-
ers in the United States producing 20
and 30 tons per acre.

European countries find the feeding
of the thousands and even hundreds
of thousands of prisoners which have
been taken no small problem. In fact,
it seems to be the policy to "permit"
the prisoners to work in the fields,
thus growing to an extent at least
their own food. The wages earned by
the prisoners shall contribute to the
improvement of their condition and
the surplus shall be paid over to them
at the time of their liberation after de-
ducting the cost of their maintenance.

Rural sanitation is being discussed
in many European states. It has been
charged that the less sanitary sections
of the great cities are often better
cared for and afford better conditions
than some of the so-called mountain
resorts which have not been under
sanitary policing. Impure water and
many conditions have been found so
unsanitary that some "resorts" have
been condemned until conditions are
corrected. This campaign is extending
to many farms. The statement is
made that fully one-half of the cases
of typhoid occurring in large cities are
contracted in country districts during
the vacation season. The movement
is a wise one.

Agricultural News Notes



of the Pacific Coast

Northern California

The Yuba City cannery has opened for the season and is operating on Phillips Clings.

Rice farmers in the Richvale Colony, Butte County, are organizing a cooperative marketing association.

Woodland, Yolo County, is considering joining with Esparto in its Almond Festival to be held September 4.

The recently enacted pure milk law, which has aroused much interest among dairy owners, will not go into effect until October, 1916.

The last of the 1914 hop crop of Mendocino County has been sold at a reported price of 13½ cents, the highest price reported for the year in that section.

Report comes from Newman, Stanislaus County, that within the past few weeks 100 head of cattle on the Miller and Lux ranch have died from Texas fever.

Big preparations are making for the St. Helena Vintage Festival and Napa County farm bureau fair. There will be a stock parade on September 4 at 10 o'clock.

Beekeepers of Yolo County have presented a petition to the supervisors asking for the appointment of an inspector to go through the apiaries of the county to inspect for foul brood.

A bunch of 25 fruit growers in the Healdsburg section who brought suit against the Producers' Fruit Company of Sacramento to collect for fruit sold two years ago have won their case.

Sheep raisers of northern Sonoma and southern Mendocino Counties met in Cloverdale last Tuesday with State Veterinarian Keane. The object of the meeting was to discuss plan for eradicating sheep scabies.

A number of olive growers of Oroville, Butte County, are talking of establishing a cooperative pickling plant at that place. A committee on organization was appointed consisting of E. P. Hilborn, H. Davis, W. J. Moore, E. W. Fogg, N. B. Crane.

The question has been raised that a misplaced comma in the title of the new fruit standardization law might change the intent of the law so that its provisions would apply to fruit intended for sale within the state. Attorney General Webb has ruled that it does not.

The state veterinarian was given additional powers by the recent legislature that will enable him more effectively to control infectious diseases among stock. The provisions of the new law went into effect August 7. This bill was passed with particular reference to control of hog cholera.

Mr. R. N. Hagen, assistant state leader in boys' agricultural clubs, recently visited the members of the agricultural high school clubs at Orland and Willows. The boys in these clubs are carrying on a corn contest, the Orland boys raising corn under irrigation and the Willows club making their trials under dry land methods.

Central California

Bean growing is being demonstrated a success in Kern County.

Experimental rice crops planted in Merced County are averaging 40 sacks to the acre.

The San Joaquin County Dairy-men's Association has now more than 1000 cows on test.

Merced is making many shipments of horses and mules to eastern points for transshipment to Europe.

Farm Adviser Mills of Solano County is starting a campaign for planting the main highways with nut trees.

The packing of raisin grapes has started in Fresno County vineyards. The first to ripen are the Seedless.

A minimum price of 75 cents has been fixed for Red Pearmain apples by the Watsonville Apple Distributors.

The beet slicing campaign of the Spreckels sugar factory at Spreckels, Monterey County, will begin Monday, August 30.

The first car of Thompson Seedless from the Alta district of Tulare County averaged \$1.77 per crate on the Chicago market.

The Terra Bella Irrigation district has been organized. The project involves the impounding of the waters of Deer Creek.

Peach growers have lowered prices for cutting to two and a half cents for a 40-pound and three cents for a 50-pound box. The price for day labor has also been cut to \$1.75.

Peach growers of Fresno County met at the chamber of commerce rooms in Fresno on August 18 to consider plans for an organization to handle this year's crop.

Kings County alfalfa growers are receiving eight dollars a ton for all the alfalfa hay they will sell, but most of them are holding for better prices, many expecting to get ten dollars.

The Associated Raisin Company is discouraging early picking of raisin grapes because both quality and weight suffer when the fruit is put on the trays before it is completely cured.

The Watsonville Apple Distributors condemn the shipment of immature apples from the state. They claim that several non-members of the association are guilty of this practice.

The railroads operating in Fresno County are joining in a request to the supervisors to appoint an assistant inspector to Horticultural Commissioner Collins. The railroads declare they are losing much business because of the inability of the commissioner to handle the great number of shipments.

Five hundred and ninety-two rabbits bagged in four hours from one acre of oats is the story that comes from the Blanco district of Monterey County. The story goes that R. J. Vierra was mowing a 100-acre oat field when he noticed the numerous rabbits. He left one acre of grain standing in the center of the field and then called in his neighbors and the neighbors' dogs.

Southern California

The Pala Indians will hold their festival August 25 to 28 at Pala, San Diego County.

Fruit growers of the Sespe district of Ventura County have formed a fumigating district and will purchase a machine.

Lima bean growers of Orange County are considering a proposition to market their beans for three years through A. & H. Levy Company.

An Oxnard bean broker is offering five cents for limas, contingent on his being able to contract 75 per cent of Ventura County's crop.

Members of the Ventura County Cured Fruit Association are reported to be receiving one cent per pound more than growers outside the association.

The record for daily shipment of cantaloupes out of Imperial Valley was broken early this month when the Southern Pacific hauled out 237 carloads within 24 hours.

W. S. Palmer of Claremont has assumed the management of the Rialto Orange and Lemon Association. He was formerly manager of the Claremont Citrus Association.

A crowd of 150 ranchers of Villa Park, Orange County, listened to the first of a series of talks on orchard culture by members of the staff of the citrus experiment station, Riverside.

Several bean growers in the Saticoy district of Ventura County have entered into an agreement to market their beans together. Their combined crop will amount to some 67,000 sacks.

Ventura County reports the sale of about 1000 tons of apricots at prices ranging from five to six and one-half cents. Many growers are holding with the hope of getting seven cents.

The Hemet Walnut Growers' Association met at the Little Lake schoolhouse Wednesday evening, August 18, to hear an address by Manager Thorpe of the California Walnut Growers' Exchange.

At the meeting of the Orange County Cured Fruit Association, held in Santa Ana last Saturday, it was decided to leave the fixing of prices entirely in the hands of the board of directors.

Packing houses of the California Walnut Growers' Association have given up the sulphur bleaching process and will use another bleach which will be much more satisfactory in that the nuts will not become rancid so quickly.

Riverside County's Chamber of Commerce has been organized "to encourage immigration, promote settlement on county lands, secure improved methods of agriculture and bring producers and business men together." The first monthly meeting will be held at Banning the third Thursday in September; the first annual probably at the time of the county fair, October 5 to 9. The following officers have been elected to serve until November, 1916: President, G. E. Snidecor, Corona; A. E. Warmington, Blythe, secretary; H. H. Hoss, Corona, first vice president; A. W. Stewart, Elsinore, treasurer.

The Coast

One hundred acres have been sown to flax at Gaston, Oregon.

Okanogan County, Washington, has the largest grain crop in its history.

The Mesa, Arizona, Farm Improvement Association has organized a cow testing association.

Klickitat County, Washington, has experienced one of the coolest harvest seasons in years.

Five hundred owners of cows at Prosser, Washington, have signed up for a cooperative creamery.

The Cochise County Cattle Growers' Association holds its next meeting at Tombstone, Arizona, Monday, August 30.

This is a poor year for the salmon packers. There is a falling off of from 40 to 50 per cent of the normal pack.

Lettuce growing conditions in the Salt River Valley of Arizona are being investigated by Horticulturist S. B. Johnson of the state university.

Many smut explosions are being reported in wheat threshers throughout Washington. Most of the fires have been put out without serious damage, however.

Wenatchee Valley apples won first prize at the apple show held in connection with the meeting of the International Apple Shippers' Association in Chicago.

The Cochise County, Arizona, Cattle Growers' Association reports that the recent rains have put the range in the Chiricahua Mountains in splendid condition.

A packing company of Helena, Montana, has received a cablegram from Liverpool asking for estimates on cost of a million head of beef cattle delivered at Liverpool.

A census of the apple crop of the Spokane district is being taken by the Spokane Fruit Growers' Company. Indications are now that the complete returns will show a crop of 75 per cent of last year's.

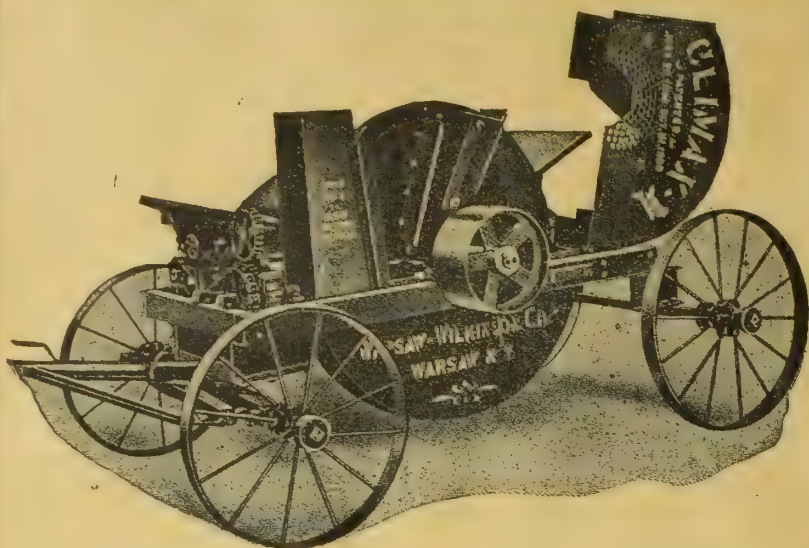
The Utah experiment station is securing a list of all live stock breeders in the state. Communications may be addressed to Dr. W. E. Carroll, Secretary Utah Live Stock Breeders' Association, Logan, Utah.

A produce firm of North Yakima, Washington, has just shipped a ton of potatoes to an Oregon buyer by parcel post. The consignee lives in the interior of the state and stage rates are several times the postal rates.

The director of the bureau of markets of the United States department of agriculture has given as his opinion that the Fruit Growers' Council is not in violation of the law, being a partnership rather than a federation or organization.

A farmers' convention and motorcade is being held by the Farmers' Improvement Association of Cochise and Santa Cruz Counties of Arizona Friday and Saturday of this week at Douglas. The automobile trip will include Bisbee, McNeal, Webb and Whitewater, where soils, crops, livestock, silos and pumping plants will be inspected.

Climax Ensilage Cutters



In the Climax Pneumatic Ensilage Cutter both the cutting and elevating are done by a large wheel which carries the knives on one side and the elevating fans on the other. Both the cutting and elevating, therefore, are done at one operation, in much simpler manner and with an expenditure of much less power than in those machines where the elevating device is a fan attachment added to the cutter.

The convenience of having an ensilage cutter of large capacity on its own road wheels is obvious. We confidently assert that no other ensilage cutter is so easy to work and easy to move and set up as ours, or has such large capacity for power used. They are unequalled in simplicity, strength, durability, convenience and safety in operation, and the excellent quality and uniformity of the silage.

For ensilage cutter of the side-wheel type, 5 to 50 tons of green corn per hour, other feed in proportion. For further particulars, call on or address

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Manufacturers and Importers of Machinery, Silos and Appliances for the Dairy and Creamery

759 South Los Angeles St., Los Angeles

Live Stock and Dairy



AN OPPORTUNE TIME TO BUILD SILOS

Written for California Cultivator
By W. S. Guilford

MORE silos will be built in California this year than ever before in the history of the state, and if the hay crop is as short as reported and the price of hay reaches the high mark common when the crop is light, those who have crops from which silage can be made and build silos now to put the forage in will be very fortunate.

There is yet plenty of time to build silos this year. Many were put up in September last year, and I know of one that was not finished until October that was filled with a mixture of crops that made silage of the highest quality and made it possible for the owner to handle a lot of stock at a profit that he would not have been able to otherwise. The silo referred to was a stave silo sold by a California company.

At this time it seems to me that anyone with a lot of stock to feed should consider the silo situation very seriously if it has not already been done.

So much beef and mutton finishes nicely on grass that supplementary feeds are little thought of, yet there are many times in a ten-year period when a quantity of succulent, rich corn silage will be worth a great deal of money. Right now there are certain percentages of the lambs and ewes that come off the ranges that are not fat enough for market, and they will not fatten on the feed they have been getting. In order to sell them for mutton it is necessary to carry them over until next spring and fatten them on the fresh feed then. If silage is available now for such animals they could be finished off and sold in six or eight weeks.

The same thing is true of beef cattle that are only partly fat. Such animals can be carried over until another year or fed on hay or grain or alfalfa, but make much better gain on a combination of hay and silage with possibly some grain.

Many alfalfa fields are not yielding more than half the tonnage they produced last year. There are probably different reasons for this in different fields, but the wet winter season undoubtedly had something to do with it. One theory advanced is that a part of the root system of the plants in some fields was rotted; another, that because of the late rains one or two irrigations have been missed; others contend that the moisture was lost from the ground very rapidly during the dry wind periods this spring and that it was impossible to get the moisture back deep into the soil again, and the crop has suffered thereby.

But whatever the cause the fact remains that the alfalfa crop is short, that a large part of the first cutting was destroyed by rain and that some of the large producers of hay are not offering any for sale, in anticipation of higher prices later in the season.

All of which is strong argument in favor of silo building.

Dairymen should be particularly keen to build and fill silos if they

have anything to fill them with, for corn silage is a good addition to the ration for a dairy cow even when alfalfa is plenty and cheap.

Innovations in agricultural practice are not generally established with great rapidity. Something over 30 years ago there were about a hundred silos in the United States, and although every one of these was a practical demonstration of the value of silage it has taken three decades for them to come into general use, and now there are many, many feeders of stock who know little of the value of silage and apparently take no interest in finding out about it. This is particularly true of California. In Wisconsin there are over 50,000 silos.

I saw a silo opened recently at Butte City Ranch at Butte City in Glenn County. It is being fed primarily to a lot of old ewes, but all of the live stock on the place appreciate it. The mules are very fond of it; the chickens and turkeys eat it; the sheep had to be starved to it at first; but the registered Berkshire hogs seemed to have the greatest liking for it. One very fine lot of young boars that are being fed and cared for with their greatest possible usefulness as breeding animals in view were already getting alfalfa pasture, middlings, tankage, barley, oil meal and a mineral mixture consisting of lime, ground phosphate rock, charcoal, ashes, sulphur, copperas, salt and ground bone, a combination that, with plenty of exercise in a woodland pasture, would seem to be about all that a hog could desire. With their herd of over 200 hogs it is possible that the silage could be made a part of a ration with profit even if no sheep or cattle were on feed at the same time.

Although there has been considerable difference of opinion as to the value of silage for swine, and it is undoubtedly true that silage alone would be too much roughage and too bulky, it is certainly a fine "part of a ration."

When this silo was filled some of the corn was pretty ripe, well past the dough and much of it fully ripe. A stream of water from a three-quarter inch hose was run into the cutter so that all of the corn that went in was thoroughly wet. The silage is coming out as fine as any I ever saw anywhere; it is in perfect condition.

RELATIVE NUTRITIVE VALUES OF FEEDING STUFFS

Written for the California Cultivator
By F. W. Woll

"What is the correct standard to go by, Henry's Feeds and Feeding or the United States Bulletin, No. 22, regarding percentage of digestible nutrients in different feeds? For instance, Henry gives beet pulp only 69 per cent of digestible nutrients and the United States bulletin gives it 72.2 per cent.

"What is the best guide in determining the food value of a concentrate, the percentage of digestible nutrients or the experiments carried out at the different stations? For instance, beet pulp which contains a much greater percentage of digestible nutrients than bran was found to be only two-thirds as valuable for dairy cows.

There is a Big Difference IN SILAGE



THE SUCCULENCE and PALATABILITY of perfect ensilage produces maximum results at a low feeding cost.

NO OTHER FEED contains as much "succulence value" as well preserved ensilage.

IT IS THE MOST ECONOMICAL FEED for summer as well as for fall and winter.

BUT THERE IS AS BIG A DIFFERENCE in silage as there is in silos.

AN ABSOLUTELY AIR AND WATER-TIGHT silo is needed to produce good silage.

IT MUST NOT LEAK OUT THE JUICES or admit the air to the silage.

TO MEET THESE REQUIREMENTS, a silo must be of such design, material and workmanship that it will be for many years just as serviceable as when first erected without its being necessary to rebuild every year.

THE IDEAL GREEN FEED SILO will keep ensilage as fresh and succulent all the year as the day the corn was cut.

ERECT AN IDEAL GREEN FEED SILO and stop silo troubles forever. Built of California redwood; it will last a generation.

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See Announcement at Head of Editorial Page

at the Wisconsin station. Cornmeal, which contains a much greater percentage of digestible nutrients than beet pulp, was not found to be any better for lambs at the Michigan station. According to these arguments, therefore, bran is 50 per cent more valuable than corn. Is this correct or are the experiments misleading?

'Is steam-dried beet pulp more valuable than fire-dried beet pulp?—J. W. McA., Chino.

The questions raised by the correspondent are perfectly legitimate, but he overlooks the fact that it is very difficult, if not impossible, to determine the digestibility of concentrates with any degree of accuracy. Differences of three per cent in the digestible nutrients are, therefore, of no importance. Different digestion experiments with the same lot of beet pulp, e. g. would be likely to show considerably wider variations than this, and still greater differences would be obtained in the case of different shipments of pulp, or if this were fed in combination with different feeding stuffs or to different farm animals. As a matter of fact the amounts of digestible nutrients that a certain ration with beet pulp would be found to contain would be practically the same, whether the digestible nutrients in the pulp be assumed to be 69 or 72.2 per cent. It would only make a difference of .3 lbs. if 10 lbs. of pulp were fed, and .1 lb. for 3 lbs. of pulp, which may be considered an average allowance of this feed for dairy cows or beef cattle.

The answer to the questions raised in the second paragraph is suggested by what has just been said. The digestible components of concentrates can only be determined with approximate accuracy where they cannot be

fed alone, as is the case in feeding pigs, and the result of digestion trials with different feeds that have been made so far are, therefore, sometimes at variance with what practical feeding experience has taught us as to the relative value of feeds. Wheat bran shows up less valuable than either corn meal or beet pulp because the proportion of fiber in this feed is much larger than in corn meal and the character of the fiber in the bran makes it more resistant to the action of the digestive fluids than in the case of beet pulp. The apparent discrepancies for digestible nutrients in these feeds are therefore easily understood, but if the amounts of net energy supplied by the three feeds are considered we also arrive at conclusions that do not agree with the actual nutritive effects, as shown by direct feeding experience. According to the latest and best information on this point 100 pounds of bran supplies 48 energy values, Indian corn nearly 89, and beet pulp 60. The energy expended in the labor of digestion is accounted for in these figures, like the mastication, insalivation, moving the food through the digestive tract, etc. The figures should, therefore, represent the energy that will be available to the animal for the manufacture of new tissue or elaboration of animal products, but no one familiar with these feeds will seriously maintain that the figures quoted give a correct measure of the relative nutritive effect of the feeds; evidently some unknown factor or some inaccuracy of method of experimentation has entered into these determinations that vitiate the results obtained. The total digestible nutrients furnish probably a more correct guide to the relative values of these particular feeds, although a larger proportion of energy

is doubtless expended in the labor of digestion in the case of wheat bran than with either of the other feeds mentioned.

On the other hand, feeding experiments sometimes lead to misleading results through errors of experimentation, such as including too few animals in the trial, conducting these for too brief periods, or other disturbing factors. Instead of accepting as final the results of a single experiment like that of the Wisconsin trials quoted, for which the writer happens to be responsible in part, one must, therefore, consider all evidence that has accumulated in order to determine the value of a certain feed in comparison with others. This is done in the so-called feed unit system. As explained in my book, "Productive Feeding of Farm Animals," this system furnishes a very convenient and satisfactory, practical method of determining the comparative nutritive value of feeding stuffs—not to the exclusion of other methods of arriving at such values, but as a supplementary means of determining these. According to this system the nutritive value of the cereals, except oats, are considered a unit, and it takes 1.1 pounds of wheat bran, oats or dried beet pulp to equal 1 pound of cereals in nutritive effect.

I am not aware that beet pulp is dried by any other method than in dry-heat ovens at high temperature. If it could be dried economically at lower temperatures there might be a certain advantage, as the depressing effect of heat on the digestibility of the protein substances would be less marked than in the case of pulp dried by the ordinary method. There would not be much gain in this direction, however, since the digestibility of the protein in fresh beet pulp is 60 per

cent and in dried pulp 51 per cent; the carbohydrates of dried beet pulp have also a somewhat lower digestibility than those in the fresh pulp.

FOOT AND MOUTH DISEASE AND THE PANAMA-PACIFIC LIVE STOCK SHOW

Editorial Correspondence

New outbreaks of foot and mouth disease are reported in the Chicago territory and elsewhere in the Middle West. It had been hoped and believed that the disease was well under control and that stock from the herds that had been free from the disease could safely be brought to the Panama-Pacific International Livestock Exposition Shows this fall. Now it is doubtful if the present outbreak will be cleaned up in time to make this safe.

Few people realize how much credit is due to D. O. Lively chief of the livestock division of the Exposition, for his consistent and firm stand in the foot and mouth disease situation. From the first he has insisted that the live stock interests of the Pacific Coast be protected and safeguarded in every way from any possible infection. To bring the big pure bred live stock association, to see the advisability of getting behind this Pacific Coast show in a strong way financially and otherwise, has been a tremendous undertaking, and it was a still more difficult task to prevail upon the leading breeders of the Central and Eastern states to bring their studs, herds and flocks across the continent to this Exposition.

And whether the show is held or not, Chief Lively has accomplished work of a great value to this Coast in making the leaders in the live stock business in the East understand that we have a great stock industry here

THE TWO GREAT SALES

Individuality! Size! Conformation! will be the striking features of
The Combination Sale

A. W. Morris & Sons
WOODLAND, CALIFORNIA

McAlister & Son
CHINO, CALIFORNIA

175 High Class, Registered **175**
Holstein-Friesian Cattle
TUBERCULIN TESTED

State Fair Grounds, Sacramento, Cal.
OCTOBER 6-7, 1915

Never before in any sale in the World have such wonderful individuals of size, growth and conformation been offered to the public. Look at this list of offerings strictly from a standpoint of individuality!

KING SEGIS PONTIAC EMPEROR—not alone the greatest bred bull but one of the greatest individuals ever offered at public sale, having three times won first prize at the State Fair, including two Grand Championships; also ten of his best daughters, one of whom has won first prize for three consecutive years.

LORENA KORNDYKE—one of the world's greatest show bulls, having won for four consecutive years at the State Fair, including two Grand Championships; also ten of his daughters, several of whom have been prize winners in the show ring.

Twenty daughters of **KING PONTIAC TOPSY**, one of the best sons of the King of the Pontiacs, that average in weight at 12 months of age, 895 lbs., and are superb individuals.

Five daughters of **DE KOL HENGVERELD BURKE**—a bull of wonderful constitution and conformation.

Four daughters of **KING KASTELEINTJE SEGIS**, whose six nearest sires and dams have all been first prize winners.

Other cows and heifers of individuality, size and conformation never equaled in any other sale anywhere.

BRED TO BULLS OF SURPASSING EXCELLENCE!

Including sons of **TILLY ALCARTRA—RIVERSIDE SADIE DE KOL BURKE—ARALIA DE KOL**, cows with not only World's Records but of unsurpassed individuality, whose sons have inherited their strong qualities. Also a son of the greatest show cow the West has ever known, **DE KOL OF VALLEY MEAD**, and one of the best sons of the King of the Pontiacs—and a prize winner at the State Fair.

BULLS GOOD ENOUGH TO BREED TO THESE FEMALES!

A strong statement but a true one! Included in the list of bulls are not only the great sire **KING SEGIS PONTIAC EMPEROR** and **LORENA KORNDYKE**, but also a son of **De Kol of Valley Mead II**, a world's record cow and a first prize winner. A son of the 1000 lb. butter cow, **Miss Blaney**, and a show bull in every respect. A son of a 31 lb. 4 year old, and other sons of great yearly record cows sired by sons of World's Champions. And these are not all! About 20 more nice ones.

TERMS: \$500 and under cash, over \$500 one-third cash, balance in 3, 6 and 9 months with bankable note and 8% interest. 3% discount for cash on time sums. Buyers from a distance must bring satisfactory bank references. Catalogs ready about September 10. Write for one.

F. L. MORRIS, Woodland, Calif.; **JAMES W. McALISTER JR.**, Chino, Calif., Sales Managers.

COL. BEN. A. RHOADES, Los Angeles, Calif., Auctioneer.

NOTE.—Foot and Mouth disease has again broken out in the East and Middle West. Your only opportunity to secure high-class Holsteins at your own price for many months will be at these two sales.

The California Holstein Breeders' Second Consignment Sale

175 REGISTERED **175**
HOLSTEINS
TUBERCULIN TESTED

Hanford, California

October 14 - 15, 1915

Do You Want Proof? Here it is:

About 25 A. R. O. cows with records as high as 29.90 lbs., made as a 4 year old, including a cow with a 3 year old record of 24.45 lbs., and others over 20 lbs.

About 30 daughters of great record cows, including a daughter of a 30 lb. cow, 2 daughters of the cow with the 29 lb. 4 year old record. Daughters of the cow with the 24 lb. 3 year old, daughter of a 24 lb. 4 year old, 3 daughters of a 22.50 lb. cow, and others from large record dams.

DAUGHTERS AND GRANDDAUGHTERS OF GREAT SIRE!

Including 15 daughters of **COLANTHA SIR PONTIAC AAGGIE**, the greatest bred son of **COLANTHA JOHANNA LAD**, nearly all from large record cows with records as high as 30 lbs., and daughters and granddaughters of such great sires as King of the Pontiacs, Pontiac Hengerveld Parthenia, Homestead Girl De Kol Sarcastic Lad, Sarcastic Lad, Juliana King of Riverside, and others of equal note.

BRED TO SONS AND BROTHERS OF WORLD'S CHAMPIONS!

What will the calves of such great cows and sired by such bulls as Tilly Alcartra Son, Arcady Pontiac Wayne Hengerveld, Judge Hengerveld De Kol, both brothers of World's Champions, Prince Juliana De Kol Walker, son of former World's record heifer, Dichter Spotford Korndyke Lad, son of a 36 lb. cow, and King Segis Pontiac Emperor III, out of a cow with a butter record of 870 lb., be worth? Can you ever estimate their value?

A GREAT LOT OF BULLS!

Including King Segis Pontiac Emperor III, Sir Holland Gant, one of the greatest show bulls in the West. A son of a cow with a record of 772 lbs. butter in a year, a son of King Pontiac Topsy, out of a 28 lb. daughter of the \$25,000 sire Johanna McKinley Segis, a son of a 28 lb. 4 year old, sired by King Segis Pontiac Emperor III, and others worthy to head your herd. Write for catalog.

JAMES W. McALISTER, JR., Chino, Calif., Sales Manager.

COL. BEN. A. RHOADES, Los Angeles, Calif., Auctioneer.

NOTE.—Foot and Mouth disease has again broken out in the East and Middle West. Your only opportunity to secure high-class Holsteins at your own price for many months will be at these two sales.



ALL OUR SILOS, TANKS AND PIPE ARE DESIGNED BY ENGINEERS TO MEET EVERY CONDITION. MADE IN OUR BIG FACTORY FROM CLEAR, AIR DRIED REDWOOD. SELECTED FROM A STOCK OF 40 MILLION FEET WHICH WE CARRY AT ALL TIMES.

SILOS
BUILT FOR YOUR PARTICULAR NEEDS, EXACTLY AS YOU WANT THEM. ALL SIZES AND DIMENSIONS.

TANKS
BUILT TO ORDER, TO SUIT ALL USES AND USERS. CHEAPER THAN METAL TANKS. LAST LONGER. WON'T RUST. CAN BE TAKEN DOWN AND RE-ERECTED WITHOUT DAMAGE. CAPACITIES, 500 TO 500,000 GALLONS. TOWERS INCLUDED IF YOU WANT THEM.

PIPE
MACHINE BANDED OR CONTINUOUS STAVE—FOR WATER SUPPLY—IRRIGATION OR POWER. CHEAPER THAN ANY OTHER PIPE OF EQUAL SIZE OR CAPACITY. LONGER LIVED THAN ANY METAL PIPE EXCEPT CAST IRON.

REDWOOD MANUFACTURERS CO.
1604 Hobart Building, San Francisco

and that our efforts are not all directed to raising palms and roses and oranges.

With his heart set on making this Panama-Pacific show the greatest ever held in America, and with a reasonable expectation that his efforts would result in this, it will naturally be a great disappointment that anything should interfere.

But there has never been a suggestion of any modification of the quarantine, however slight, that might enable breeders to come here to the fair. It has been urged from the start that the quarantine be held absolutely rigid until all possible danger to Pacific Coast interests was past.

What will develop in the situation during the next few weeks is impossible to prophesy, but there is little chance of eastern herds of cattle, sheep and hogs coming to the exposition.

This makes a great opportunity for Pacific Coast breeders to make a big showing. Some of the best stock in America is being bred here, all that remains is for the breeders to get it in shape and exhibit it.

HOLSTEIN SALE AT HANFORD

There will be offered at the California Holstein Breeders' second consignment sale at Hanford, October 14 and 15, 175 head of high class regis-

22.5 pounds; Molly De Kol Glasgow who has a record of 19.58 pounds, and Vogelschem who made 19.58 pounds and won \$50 prize money from the association.

There will be 15 granddaughters of the world's famous sire, Colantha Johanna Lad, sired by his best bred and best individual son, Colantha Sir Pontiac Aaggie, who is out of a 21-pound daughter of the former world's record cow, Aaggie Cornucopia Pauline. His two granddams were both the greatest cows of their day, one having a 34-pound and the other a 35-pound record.

These heifers are a wonderfully uniform lot, possessed of great individuality and constitution and are from well bred cows with records of 30 pounds, 29 pounds, 24 pounds and 22 pounds butter. They will be in calf to one of the greatest bred bulls in the United States, and they offer an extraordinary opportunity to the buyer who wishes to secure foundation stock of the very finest quality.—James W. McAlister, Jr.

We have correction to make in the advertisement of the Hanford sale which appeared in last week's paper. There are to be 175 animals sold there instead of 100, as stated.

WHICH ROAD?

The agricultural extension service



Colantha Sir Pontiac Aaggie

Dairymen, Attention! Special for September

Cash Only

We have decided to continue the **Special Prices on Tubular Coolers** for One Month More

12 Inch
\$13.50

18 Inch
\$17.50

24 Inch
\$20.00

Coolers Guaranteed for 25 Years

A new Empire Cream Separator, 1000 lbs. Capacity, for \$75
Single End 4-Valve Bottle Filler, \$50—Gills, Pints and Quarts
Everything for the Dairy

Western Dairy Machinery & Supply Co.

Main 3028

818 So. Los Angeles St., Los Angeles, Cal.

OLDS CREAM SEPARATORS

Why not make that new separator an Olds, while the price is right? Owing to a receiver's sale, I am selling this well-known, standard line of cream separators at less than wholesale prices.

Here are my prices for the Olds Cream Separators:

No. 14—500 lbs. milk per hour.....\$45.00
No. 16—750 lbs. milk per hour.....50.00
No. 20—1000 lbs. milk per hour.....55.00

F. O. B. Los Angeles and San Francisco

Write for catalog and complete particulars regarding this great "price wrecking" offer.

I also have gas engines, the famous Olds line, 1½ H.P. to 35 H.P. at 50 per cent reduction.

How about a 1½ H.P. complete ready to run for \$35.00, f.o.b. Los Angeles. Other sizes are in proportion. Get in touch with me before buying. I can save you money and give you standard quality.

BERNARD B. FALLON
SPECIAL AGENT HARRIS BROS. CO.

205 N. Los Angeles St.

Los Angeles, Cal.



Nicholls-Loomis Co.
Straw
2000 tons No. 1 Straw for Fertilizer. Get our prices
LARGEST SHIPPERS IN CALIFORNIA
PHONES 10969 10969 1128 1140 SAN PEDRO ST. LOS ANGELES, CAL.

tered Holstein-Friesian cattle. Amongst them is the entire herd of Mr. C. C. Lester of Gilroy, of about 60 animals, including many high record cows. There will be offered Wisconsin Daisy of Sleepy Hollow who made 29.91 pounds butter from 619.4 pounds milk in seven days, milking as high as 102 pounds of milk the last day she was in test. She would have increased her record undoubtedly three or four pounds more of butter had not her test been unfortunately discontinued through a mistake. She, however, did even better than her official record on private test, making 663 pounds milk in seven days, and 2613 pounds milk in 30 days, testing 3.6 per cent, and it is to be expected that she will make over 35 pounds butter the next time she comes into milk.

This is one of the highest record and best bred cows that has ever been offered for sale in the West. She is a daughter of Anselmo, who is already recognized as one of the greatest sires of the breed, his daughter averaging over 21½ pounds of butter for seven days, which record is approached by very few other bulls.

Two other daughters of this wonderful sire will be sold, including Colantha of Sleepy Hollow II, a 24-pound three-year-old, and there will be other high record cows, including Mercedes Korndyke De Kol Johanna who made

of the University of Arizona college of agriculture is sending out a good sized hanger suitable for hanging in stores, postoffices, etc., which reads: "Which Road, Mr. Farmer?" and underneath is an engraving showing a roadway through the country which finally branches. On one of the branches is a signboard reading, "Alfalfa Market Through the Dairy Cow \$25 Per Ton." In the distance is the creamery and toward it travels an automobile loaded with cans of cream. On the other whose signboard bears, "Alfalfa Market \$8.00 Per Ton," is the team and wagon hauling baled hay to a freight train. Underneath in large type we note:

"THE DAIRY COW"

"Will Increase Your Profits by marketing your alfalfa hay at \$25 per ton, giving you a monthly income, improving the fertility of your soil."

"The Only Cow for You Is a Big Milk Producer."

"Find Out How to Make Money in Dairying."

Horse breeding community work is handled by farmers in many communities throughout the Middle West, groups of farmers who recognize the value of an excellent stallion of pedigree for crossing on their farm mares forming stallion companies to buy horses that one or two men would be unable to handle.



Poultry for Profit



PROGRAMS FOR A. P. A. CONVENTION AND EXPOSITION SHOW

DIRECTOR QUISSENBERRY, in charge of the egg-laying contest at the Panama-Pacific Exposition and the poultry exhibits which will be featured later, suggests that poultrymen bear in mind that entries for the greatest poultry show ever must be made on or before October 15. It will be great honor to the poultryman who wins ribbons at this great show and he must not overlook the closing date for making entries or he will have no opportunity for winning honors. Don't delay until too late. Write for entry blanks at once. By the time you can get blanks and make your entries it will be show time. This is important and you should give it attention today. It will do no harm to get the blank and have it on hand even if you should fail to use it.

In connection with the poultry show there will be the 40th annual meeting of the American Poultry Association, the first ever held on the Coast. The following will be the program:

Monday, November 15

8:00 p. m. Reception at Inside Inn for all members of the American Poultry Association and their families.

Tuesday, 9:30 a. m.

Address by Lyman C. Byce, president of the American Poultry Association of California and member of the executive board of the A. P. A.

Address by D. O. Lively, chief of the Department of Live Stock.

Address of welcome and presentation of the exposition medal, Pres. Chas. C. Moore.

Response by E. B. Thompson, president American Poultry Association.

History of the American Poultry Association, by Sec. S. T. Campbell.

"The Poultry Industry, Present and Future," Grant H. Curtis.

"Breeding and Feeding for Egg Production," C. T. Patterson, pathologist at the Missouri state poultry experiment station, illustrated.

Wednesday, 7:30 p. m.

"Open-air Housing of Poultry," Dr. Prince T. Woods.

"Methods That Have Made Possible the Getting of a Living Out of Poultry," W. Theo. Wittman.

10:00 p. m. All A. P. A. members and their families will be furnished tickets to the Ostrich Farm, Yellow Stone Park, Old Faithful Inn and various interesting concessions on the Zone

Thursday

Opening of the great Panama-Pacific Universal Poultry Show.

Friday morning there will be a three hours scenic boat trip out through Golden Gate and to interesting points surrounding San Francisco Bay. If 100 or more make the trip it can be made at a cost of only 65 cents each.

EDUCATIONAL PROGRAM FOR THE PANAMA-PACIFIC POULTRY SHOW

Saturday, November 20

2:00 p. m. Blackboard chalk talk, "Science of Type," W. H. Card.

Illustrated lecture, "Chicken Pox with Special Reference to Preventive

Vaccination," Dr. I. R. Beach of the University of California.

"Conclusions Drawn from Fifteen Years College and University Work with Poultry," Prof. W. R. Graham, Ontario Agricultural College.

Lecture and demonstration in capon-

POULTRY SHOWS

Riverside, Fourth Annual Poultry Show, Riverside District Fair Association, Oct. 5-9, 1915, E. I. Hammond, secretary, Riverside.

San Jose, Santa Clara Valley Association, annual show, Oct. 6-9, 1915, Chas. R. Harker, San Jose, secretary.

San Francisco, Panama-Pacific Exposition, international poultry show, Nov. 18-28, 1915, D. O. Lively, Panama-Pacific Exposition grounds, secretary.

Redwood City, San Mateo County Poultry Association, Nov. 11-14, 1915, Fred West, Burlingame, secretary.

Phoenix, Arizona State Fair, Nov. 15-20, 1915.

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klusman, secretary.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Seattle, Wash., King County Poultry Association, Jan. 10-15, 1916, C. W. Melville, 473 Colman Building, Seattle, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

izing, illustrated with live birds, Geo. Beuoy.

Monday

2 p. m. Lecture, "Ohio and the Day-old Chick Business," Prof. F. S. Jacoby, Ohio State University.

Lecture, "Selecting the Layers"—Results of experiments at the Oregon station, illustrated, Prof. James Dryden, Oregon Agricultural College.

Lecture, "Economics of Poultry Feed," Prof. M. E. Jaffa of the University of California.

Lecture and demonstration in selection of laying hens and breeding stock, Walter Hogan.

Tuesday

2:00 p. m. "Some Problems of the California Poultryman," Prof. J. E. Dougherty, professor of poultry husbandry, University Farm.

"Waterfowls and their Management," Judge Chas. McClave.

CALIFORNIA STATE SHOW NOTES

Much interest is already being shown by the California breeders in the show to be given by the California State Poultry Association at Sacramento, January 14 to 18, 1916. The officers of the state association are planning on big things for their first show, and they are being enthusiastically assisted by all members of the Sacramento association. Many inquiries are now coming in to the secretary's office regarding the show, and present prospects point to one of the best and largest shows on the coast. This show will come just at the beginning of the breeding season and a win made then will be of great advertising value to the lucky breeder as all will be getting ready then to place their orders for stock and eggs; a win then will bring immediate results.

There will be five ribbons in each class and cash prizes will be paid for the first three places as follows: \$2.50; \$1.50 and \$1.00 on singles; \$8.00; \$5.00 and \$2.00 on pens. There will also be a big collection of trophy cups, medals and specialty club ribbons. Hinds, Luce and Russell have been engaged to judge the show. They are all popular judges on the coast and will draw big entries.

The premium list will be ready for mailing about the middle of September. Send in your name now for a copy. The secretary is C. A. Wilkins, Box 1117, Sacramento, California.

BETTER EGGS

It has been estimated by the United States department of agriculture that the annual preventable loss due to the present system of handling eggs is 17 per cent.

The egg handler at the local market and the producer are deemed responsible in a large way for the low prices of summer eggs and the large loss that occurs. The method of handling the eggs upon the farm and the methods used by the receiver are unquestionably very much at fault. The inferior quality caused by poor management can be very largely remedied if the following suggestions are carried out:

Do not keep mongrel stock. Select pure breeds that lay more and larger eggs.

Gather the eggs at least daily, so that none remain in the nests over night. Twice daily is better during very warm weather.

Only such nest eggs as gypsum or china should be used.

Provide plenty of clean, vermin-proof nests in the houses.

Do not sell questionable eggs that come from stolen nests.

Avoid marketing dirty eggs by using clean quarters. Eggs should not be washed, as it spoils their keeping qualities.

Store the eggs in a dry, cool, well ventilated place away from flies or bad odors.

Market eggs as often as possible, two or three times a week in hot weather. Protect from the hot sun when taking them to market.

Market only eggs of standard size and keep the small inferior ones at home. A standard size dozen should weigh one and one-half pounds.

Produce infertile eggs. Remove the male birds from the flock immediately after the breeding season. Fertile eggs cause a loss of \$15,000,000 in the United States every year.

Use an attractive package. The paper cartons holding one dozen each are cheap and attractive.

Combine shipments as a matter of

economy. Do this by forming community egg circles and egg marketing clubs.



During the Molt

Get the Flock in Good Condition
Keep the Flock in Good Condition
by Feeding

Coulson's No. 3 Condition Powder

Write for Full Particulars and Delivered Prices to

Coulson Co. Petaluma, Cal.



Closing out Sale of Poultry Supplies

Regardless of cost

Great Big Bargains—for some of them see Poultry Columns of Classified Liners in Sunday papers. Come in and make us an offer for anything in the Store from a 10c package of Killamite to a Bone Mill or an Incubator.

West Cost Seed House

116-118 E. 7th St., Los Angeles
Main 5631. Home F-5381



Every Poultryman

should have
the 1915 Revised
Edition of the
American

Standard of Perfection

—Illustrated—

A complete description of all recognized varieties of Fowls, as revised by the American Poultry Association at its thirty-eighth and thirty-ninth annual meetings.

Book alone (cloth) \$2.00
With Cultivator 1 yr., \$2.75
If book is to be mailed
add 10c to cover postage

Cultivator Pub. Co.

115-117 North Broadway
Los Angeles

BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery.
EXTRA SELECTED BLACK MINORCAS & WHITE LEGHORNS OUR SPECIALTY
Our Chicks are hatched in the
BEST VENTILATED HATCHERY IN CALIFORNIA
INSTRUCTIONS HOW TO RAISE CHICKS FREE

Hicks Jubilee Hatchery,

Route 2, Box 22,
Petaluma, California

Money Making Little Liners

Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers
LINER RATES ARE 12c PER LINE PER ISSUE

No Ad Accepted for Less Than 36c Per Issue. Figure 6 Words to a Line

TREES

Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoas, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holve, Fullerton, Cal.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Buds of New, Rare and Commercial Fruit and nut trees for sale. Tribble Nurseries, Elk Grove, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

MACHINERY

USED RANCH MACHINERY, PUMPS, WINDMILLS, TANKS, ENGINES. HAY MACHINERY, PUMPING PLANTS. TANKS, TANKS, TANKS.

WHY BUY NEW? SAVE HALF. MATERIAL GUARANTEED.

PUMPS, PIPE, CYLINDERS, RODS. DEAL WITH RELIABLE FIRM, 15 YEARS IN BUSINESS, CHEAPEST IN CITY.

DEMMITT CO., 120 N. Main, Los Angeles.

For Sale—Cheapest in Town. 12,000 ft. galvanized pipe, 1 1/4 black, new threads, couplings, \$4.85; 1 1/2 black, \$5.00; 8000 ft. brand new galvanized, 1 1/2, \$9.90; slightly used, \$7.90; several tons all kinds pipe fittings, pumps, engines, ranch tools. DEMMITT, 120 N. Main, Los Angeles.

For Sale—Used and new Gas Engines, 2 H. P. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild Gas Engines correctly. Get prices. Lloyd, 806-808 N. Main St., Los Angeles. F7020—Broadway 4103.

Buy Gas Engines Right—We sell direct at agent's price. Heavy duty, ruggedly built engines that stand up. Get new engines at used engine prices. Let us tell more about it. T. W. Hobron Co., 126 Lick Bldg., San Francisco.

For Sale—Windmills, engines, tanks, pipe, horses, wagons, harness. We install your outfit. Will buy anything you have. Ranchers' Exchange, 1630 So. Main St.

Machinery of Every Description Bought and sold—Buttress & McClellan, 205-207 N. Los Angeles street, Los Angeles. Broadway 8098; A5473.

For Sale—Bull tractor for plowing with 2 gang plows, used 3 months; cost \$550, our price \$350. DEMMITT CO., 120 N. Main, Los Angeles.

POULTRY

Just Out—The Cultivator Poultry Book. "Poultry for Profit" by Jean A. Koethen. Published by the Cultivator Publishing Co. Highly endorsed by experts. Over 200 pages, 50 illustrations. Contains simple methods of avoiding and overcoming difficulties. A guide to poultry success under Western conditions. It tells what to do, why to do it, and how to do it. Nicely bound in cloth. Price \$1.00 postpaid, or with Cultivator one year, \$1.75. Send orders to Cultivator Publishing Co., 115-117 North Broadway, Los Angeles, Cal.

Baby Chicks—Rhode Island Reds and White Leghorns. My guarantee safe arrival, full count, strong, vigorous; fine bred chicks, Leghorns, \$9.00 per 100. Will lay in five months. Reds, \$11.00 per 100. Will lay in six months. J. W. Lyon, Gardena, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

Fall Delivery—White Minorca (the best all purpose fowl) and Golden Buff Leghorn baby chicks and eggs—get your chicks and be ready—the poultry business is going to flourish from now on. Sandridge Hatchery, Kerman, Calif.

Baby Chicks—Electric Hatched. White Leghorns, R. I. Reds, Barred Rocks and Black Minorcas. We are booking orders for Fall delivery. THE ORLAND HATCHERY, Orland, Glenn Co., Calif.

First-Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeye Hatchery, Turlock, Cal.

WANTED

Wanted—Home in country for 10-year-old orphan boy. Is well trained, industrious, bright, strong and quiet. Needs a mother's and father's interest. Will adopt to right people. H. H. Eshelman, Soldiers' Home, Cal.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Krukeberg Press, 237 Franklin St., Los Angeles.

DOGS

Pedigreed Alredale Pups—\$10 to \$17.50. 635 Acacia avenue. Phone 2734-W. W. R. Whitmore, Fresno, Calif.

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We repair, buy, sell and exchange musical instruments; used instruments, good as new, sold cheap. Write for bargain list. Bolander's Fiddle Hospital, 52 Second street, San Francisco.

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Developing, 10c per roll. Printing, 2 1/4 x 3 1/4, 2 1/2 x 4 1/4, 3c; 3 1/2 x 4 1/4, 3c; 3 1/2 x 5 1/4, 4c. Denver Store, 706 S. Hill St., Los Angeles.

LIVE STOCK

I have another crop of seventy-five head of BIG TYPE POLAND CHINA BOARS, born in February, sired by IOWA WONDER, who is a son of A WONDER, the GREATEST POLAND CHINA BOAR, LIVING OR DEAD. IOWA WONDER is in the 1000-LB. CLASS. One of his sons from one of my good registered sows should make YOU MONEY. I will sell the best first. On account of being overstocked will sell them at \$20 each while they last, but they will not last long at this price, so ACT QUICK if you want an EXTRA GOOD BOAR FOR LITTLE MONEY. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, extra heavy bone; weight with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Del Dayo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Milch Goats—I have a bunch of graded Toggenberg milch goats; one doe six years old, a fine milker—three does each two years old, and four kid does each six months old. All from same strain. Will sell the bunch very reasonably. For particulars and price address Walter Bowen, Route No. 3, Modesto, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

Cholera Immune Berkshire Pigs—All ages. Registered Holstein bull, Prairie Pieterie 107062, three years old—gentle and guaranteed. Selling to avoid inbreeding—\$300.00. Ricconi Bros., Mountain View.

For Sale—Registered. Berkshires. 25 choice pigs of best breeding from the best strains in America. For prices and description address H. L. Murphy, Perkins, Sacramento Co., Cal.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Thoroughbred Berkshire and Tamworth Hogs for Sale—Western Hog Company, formed by staff of Newmark Grain Co., Los Angeles. Ranch at Elsinore.

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Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Novato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Hogs—A few thoroughbred Hampshire Boars for sale. Reasonable prices. L. P. Conway, P. O. address, Sawtelle, Calif. Sunset Phone, Santa Monica 565-M.

Berkshires Registered—Young stock from Masterpiece Strain at \$10 each. Weanling age. G. A. Casey, Box 7, King Rd., San Jose.

Poland Chinas—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

Glennview Poland China—Stock for sale. Chas R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Thoroughbred Duroc Jersey Boars and Gilts, strong and vigorous stock. Fred Hart, Exeter, Cal.

For Sale—Prize Winning Shetland ponies. Selling out. Priced worth the money. Maurice Rucker, Fair Oaks, Cal.

Berkshires—Boar pigs for sale, Butte City Ranch, Butte City, Glenn Co., California. N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

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Wanted—About seventy-five young men and women to enter the WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address, WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal. 634 E. Main St.

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Leading Rabbltry in America—Flemish Giants a specialty. Prize winning and heavy weight stock. Scored and sold on their merits. Inquiry and inspection solicited. Catalogue on request. Empire Rabbltry, Empire, Cal.

Mt. Diablo Rabbltry—"New Zealand Reds," imported stock; no culls; prices right. State your wants. Box 117, Concord, Cal.

Caldwell's Royal Red New Zealanda scored and sold on merit. Catalog free. Caldwell Bros., Box 613R, Los Angeles.

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Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs. \$8.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co., Cal.

Get Our Prices—LUTHER BURBANK & MEDITERRANEAN SPINELESS CACTUS PLANTATIONS, SAN DIMAS, CAL. Covina Phone 902.

MISCELLANEOUS

Free for Six Months—My special offer to introduce my magazine "INVESTING FOR PROFIT." It is worth \$10 a copy to anyone who has been getting poorer while the rich, richer. It demonstrates the REAL earning power of money, and shows how anyone, no matter how poor, CAN acquire riches. INVESTING FOR PROFIT is the only progressive financial journal published. It shows how \$100 grows to \$2200. Write NOW and I'll send it six months free. H. L. Barber, 430, 23 W. Jackson Blvd., Chicago.

If you're not satisfied with your present job, you can make good wages selling our Teas and Coffee. Some of our Agents are making \$40.00 per week. For our special offer write C. B. Wheeler, 605 Crocker St., Los Angeles.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

Dried and Ground Kelp, running 13 per cent actual potash. Write for prices. Standard Fertilizer Company, 701 H. W. Hellman Building, Los Angeles, Cal.

Cedar Posts—Split from Washington Red Cedar. Get our prices before buying. G. R. Kirk Co., Tacoma, Wash.

FARM LANDS FOR SALE

"GOOD NEWS FOR YOU" SCHOOL LAND

will soon be on the market, under more favorable conditions than formerly. In 1853 the United States gave California School Land in ALL COUNTIES. For many years no one could buy it. But school land has been coming back all the time. YOU now have a LARGE AMOUNT to select from. Will you get YOUR share? We have spent over 25 years and many thousand dollars searching State and Government Land records. Do you want the results of our work and experience for small fees? Lists of STATE Land in any 3 Counties, \$5. County Sectional maps showing Vacant GOVERNMENT land plainly marked \$2.50, any county. State Map showing SCHOOL Land in California, \$2.50. Your rights are worth over \$1000 if used SOON. Order TODAY, Joseph Clark, Searcher of State and Government records, Manager, California State Land Information Bureau, 1511 K St., Sacramento.

The owner of 3000 acres near Madera desires to subdivide for real settlers; the land is typical San Joaquin valley loam, free from alkali, and will grow anything; railroad crosses property and there is abundant water at shallow depth; the land is for sale at the right figure to people with proper qualifications; no cash payment down and terms to suit, provided the purchaser has sufficient money to put the land under water. Remember that there are no real estate commissions to pay to swell the price of the land; all the owner wishes is interest on his money. No real estate agents need apply. GREENE ESTATE COMPANY, 207-208 Berkeley Bank Building, Berkeley, Cal.

Carlsbad irrigated lands—bordering ocean; on State paved highway and Santa Fe Ry., 80 miles south of Los Angeles. Government records show Carlsbad warmest in winter, coolest in summer of any spot in California. Deep soil, model water system, low rates. Lemons mature in summer when price is highest. Immense profits in fruits and berries adaptable to coast territory. Winter vegetables without competition. Minimum temperature 1914 was 41 degrees. Tomatoes, chili, peas, beans, eggplant, rhubarb, etc., bring \$150 to \$400 per acre. Easy purchase terms. Liberal leases. SOUTH COAST LAND CO., GEORGE BUXTON, SALES AGENT, CARLSBAD, CAL.

For Sale—Tulare 40 acre dairy and hog ranch, 2 miles from Tulare, 1/2 mile to school on oil road and R. F. D.; good pumping plant, house, barn, outbuildings. Will give good terms; might consider part trade. For particulars address Box H, care Cultivator.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

Do you want a hog ranch? If so and you have a little money, write for my proposition to start you. E. A. Stephens, 945 Orange St., Los Angeles.

DUCKS

Ducks—High class Mammoth Imperial Pekin Ducks for breeders. Best stock in California. Stone Canyon Poultry Farm, near Sawtelle, Calif. P. O. address Sawtelle. Sunset Phone, Santa Monica 565-M.

STANDARD APPLE LAW

(Continued from page 199)

or sold, and to inspect all apples and apple boxes found in any such place.

"(b) To design, and cause to be printed or lithographed, suitable uniform stamps to be used on apple boxes, as required by section four of this act, to sell the same as hereinafter provided, and to prescribe the method of canceling the same.

"(c) To appoint, superintend, control, and discharge, such inspectors, in accordance with the provisions of the civil service law of the state, for the special purpose of enforcing the provisions of this act, as in his discretion may be deemed to be necessary,

and in conjunction with the board of control, to fix their compensation, provided that no inspector shall be paid more than five dollars per day.

"(d) Personally, or through any deputy or any such inspector, to seize and retain possession of, any apples or apple boxes packed, shipped, delivered for shipment, offered for sale or sold, in violation of any of the provisions of this act.

"(e) In the name of the people of the state of California to cause to be instituted and to prosecute, in the superior court of any county or city and county of the state of California, in which apples packed, shipped, delivered for shipment, offered for sale or sold, in violation of any of the provisions of this act, may be found, an action or actions for the condemnation of apples as provided in section 11, of this act."

WINTER VEGETABLE UNION GETS TO WORK

At a meeting of the board of directors of the Winter Vegetable Union, held in the Chamber of Commerce rooms, San Diego, Saturday, the 21st, it was reported to the board that the incorporation of the association was completed and that all was in readiness to proceed with the final steps leading to the completion of the association.

Director Sharpe was made a committee of one to make tentative connections with brokerage firms in the Northwest and in general to get information from the large produce dealers in that district that the association would be in readiness to ship vegetables, beginning approximately November 1.

The board of directors expressed the wish that the fact be published that they were in the field for a manager of the association and would appreciate applications from parties who have had experience in handling produce of this character. The officers of this association are: H. Culbertson, El Cajon, president; E. L. Owen, La Mesa Heights, secretary. Directors, J. S. Scott, El Cajon, W. R. Edwards, Chula Vista, J. S. Hull, Nestor, W. Sharpe, Nestor, I. C. Robinson, La Mesa.

ORANGE SHOW

The National Orange Show management has fixed upon the date of February 17-24, 1916, for the sixth annual show. F. M. Renfro will be general manager, working under the direction of a large executive committee of San Bernardino people. The general scheme of ornamentation has already been settled upon. It is stated that it will have the general appearance of a veritable garden, with song birds, greenery and flowers. Pergolas, vines and growing things will make up the principal features. The advertising poster design has already been chosen, one of the features of which will be the arrowhead, a famous landmark near the city of San Bernardino.

LINDSAY

By M. Nelson Moore

Lindsay, the gem of the San Joaquin, Where thousands of acres of orange groves green Lade the air with their sweet perfume, In that festive land of fragrant bloom.

Lindsay, the pride of all rich Tulare, Nature has lavished her gifts most rare, Her wonderful groves as banners furled Send her fruit all over the world.

Blossoms sun-kissed into cups of gold, Nectar, ambrosia for gods they hold; A fair summer land of gold and green, Lindsay! We crown you the Citrus Queen.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cowpeas as Poultry Food

What is the value of cowpeas, field peas, soy beans, fenugreek and sunflower seed as a chicken feed?—Subscriber, Tulare.

All kinds of peas and beans are valuable because of their high protein content. I suppose fowls can be taught to eat them green, but they are usually dried and ground and mixed with ground grains in the dry mash. The soy bean is most generally used. It contains over 40 per cent of protein, and must therefore be used with caution because these rich foods are difficult to digest, but it can well be made 10 per cent of the mash. Cow peas have a nutritive ratio of 1 to 3 and dried field peas a nutritive ratio of 1 to 6, according to Professor Jaffa's table. A larger per cent of pea meal than of soy bean meal can safely be used in the mash and it will take the place to a large extent, though not altogether, of beef scrap.

Sunflower seeds are one of the best of poultry feeds, having a protein content about like that of good wheat bran. They contain also about 20 per cent of fat and oil, and this makes them rather fattening for regular use. They are especially valuable in molting time and if given as a full meal (a handful to each bird) four times a week will bring the birds through the molt quickly and in good condition. Perhaps this is because it is 15 per cent of the grain ration of laying hens through the winter. Fenugreek is sometimes used as a poultry tonic but I have never heard of its being made a part of the regular ration. Perhaps this is because it is usually expensive, but I should want the opinion of some one who had used it in this way before trying it.—J. A. K.

Permanent Bordeaux

Last fall I gave all my young trees a coat of Bordeaux paste with very good results as I have had but little gumming this year as compared to the previous year. However I find the paste as used does not last long on the trees, in fact, was about all washed off of many of them by the rains. I would like to ask if in your opinion it would be considered advisable to add to the paste formula a little cement or glue to make it last longer. If the glue should be used, about how much, and would the prepared article be best, or otherwise?—Subscriber, Exeter.

Prof. H. S. Fawcett answers:

"I would not advise using glue or anything of this nature in the Bordeaux paste as I would be afraid that it would tend to seal up the pores in the bark and might possibly cause injury. I find that when the Bordeaux paste is made with good caustic lime that has not previously been allowed to air-slake, it lasts much longer than when made up with poor lime. Even though a greater part of it appears to be washing off, its effect often lasts longer than one might think from appearance. I believe it would be better on heavy soils, where it seems advisable to use the Bordeaux as a preventive, to repaint the trees every year or so, rather than attempt to use anything to make it stick longer.

Cowpeas, Soy Beans, Sunflower Seed, etc.

A poultry expert wishes information as to possibility of growing cowpeas, field peas, soy beans, fenugreek and sunflower seed in the San Joaquin Valley without irrigation. This question was referred to Mr. Guilford, who replies:

"It is difficult to answer the question about growing crops without irrigation without knowing the particular locality and the sort of land that is to be used. There are many places in both the Sacramento and San Joaquin valleys where soy beans, cowpeas, sunflower seed, corn and other crops good for chicken feed are grown without irrigation. Rich soil that can be worked soon after the rains and that is deep and retentive of moisture will produce well if the crop is planted early and if the seed bed is well prepared and the crop is cultivated so as to conserve winter moisture for the use of the plants. There is much soil like this and there is much more, sometimes within a short distance of the good soil where summer crops are a failure without irrigation.

Spider on Bean Leaves

A subscriber sends leaves of lima beans showing yellow and even reddish spots on them as if attacked by a fungus. They were forwarded to Prof. Fawcett, who writes that he could discover no fungus and submitted the leaves to Prof. H. J. Quayle who finds that they are seriously affected with mites, probably the ordinary red spider mite. Where leaves are infested as badly as this it is probably too late for any effective treatment but if taken earlier in the attack spraying with dry sulphur mixed with hydrated lime would probably have effected a cure.



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Examine Mouth

Have a calf about two months old that when chewing its cud, instead of swallowing each time as it should, a slimy green fluid with offensive smell runs from its mouth. We feed milk twice a day with a handful of bran mixed in it. Calf also has alfalfa pasture and plenty of water. Seems to have a good appetite and is in good condition. What is wrong?—Subscriber, Phoenix, Arizona.

Evidently there is something wrong in the mouth. Perhaps a loose tooth, or a barb or snag of some kind is sticking in the gums or roof of the mouth. Examine the mouth carefully and you will probably find the cause of the trouble and be able to remove it easily.

Fails to Breed

Our young Jersey cow has taken the bull now four times and apparent-

ly without effect except that the last time she refused. Her first calf was born February 25 and is large and healthy. Cow is in fine condition and has good appetite. Her next period will be September 4 or 5. Can anything be done for her between now and that time to improve her condition in that respect. Have been advised to use a certain patent medicine which is said to help in such cases. What do you think of the medicine?—Subscriber, Covina.

It may be that the cow is too fat or has too little exercise. Would advise that you reduce her feed and see that she gets plenty of exercise between this and the next time she is due to come in heat even if you have to drive her a few miles on the road. Also give her the following medicine: Get six ounces of tincture of iron and give her one ounce twice a week either in a little feed or by putting a dose in a bottle, adding a pint of water to it and giving it as a drench. Do not think much of the patent medicine you mention.

Feeding Dog

I write to ask for directions in regard to the proper feeding of a collie pup about three months old, also when fully grown.—Subscriber, Riverside.

The feeding of a dog is a mooted question. Ordinarily the dog is fed the scraps from the table and nine times out of ten is overfed. A starved pup will learn to steal but an overfed pup will get fat and sluggish. The table scraps are all right. A pint of milk with some bread in it is good. If it is necessary to prepare food for the dog make a cake of two parts corn meal and one part of flour mixed with sour milk, to which add a little salt and enough baking soda to offset the sour milk. Bake it until it is hard and crisp and feed a portion of it at night. A fresh beef bone with a little meat on it is always acceptable. Some people think that meat for a dog should be cooked, but nature says raw meat and they thrive well on it. Pups should be fed two or three times a day according to the amount of the exercise they get, and the largest meal should be given at night. Grown dogs do best on one meal a day and that always at night. The dog biscuits that are sold in the market are prepared of cheap flour, a little corn meal, meat broth and some scraps of meat baked very hard and kept dry until used. No set rules or amounts can be given, only be sure that the dog is not overfed. Many dogs suffer from lack of water. A place should be provided where they can help themselves to water when they want it.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Trust Deposit

A makes a written request of the bank to consider his deposit as a deposit in trust for his sole use and benefit and checks to be cashed only on the O. K. of the cashier. In case of his decease what becomes of the fund?—Subscriber, Long Beach.

The trust made of the deposit is what is known as a dry trust and would be executed so that in case of the decease of the trustor the executor or administrator of the deceased would be permitted to draw out the

funds in the bank as the property of the estate of the deceased.

Pension to Soldier's Widow

Man filed interlocutory divorce against wife July 7, 1904. Neglected to get final papers filed until August 21, 1905, after marriage on June 20, 1905. Was the marriage legal? If it was not legal to remarry and the man did not know it, would that make it legal? If it was illegal is second wife entitled to claim for war pension?—Subscriber.

The parties were not divorced until the final decree was made, filed and entered; therefore a marriage contracted prior to the date of entry of the final decree was void, as there is no such thing as the common law marriage within this state. The only method by which the marriage could be validated would be by second marriage after the entry of the final decree of divorce, and it is very doubtful if the marriage being thus invalid the wife would be entitled to claim for war pension. (We believe a widow would not be entitled to pension unless married to a soldier prior to 1890.—Ed.)

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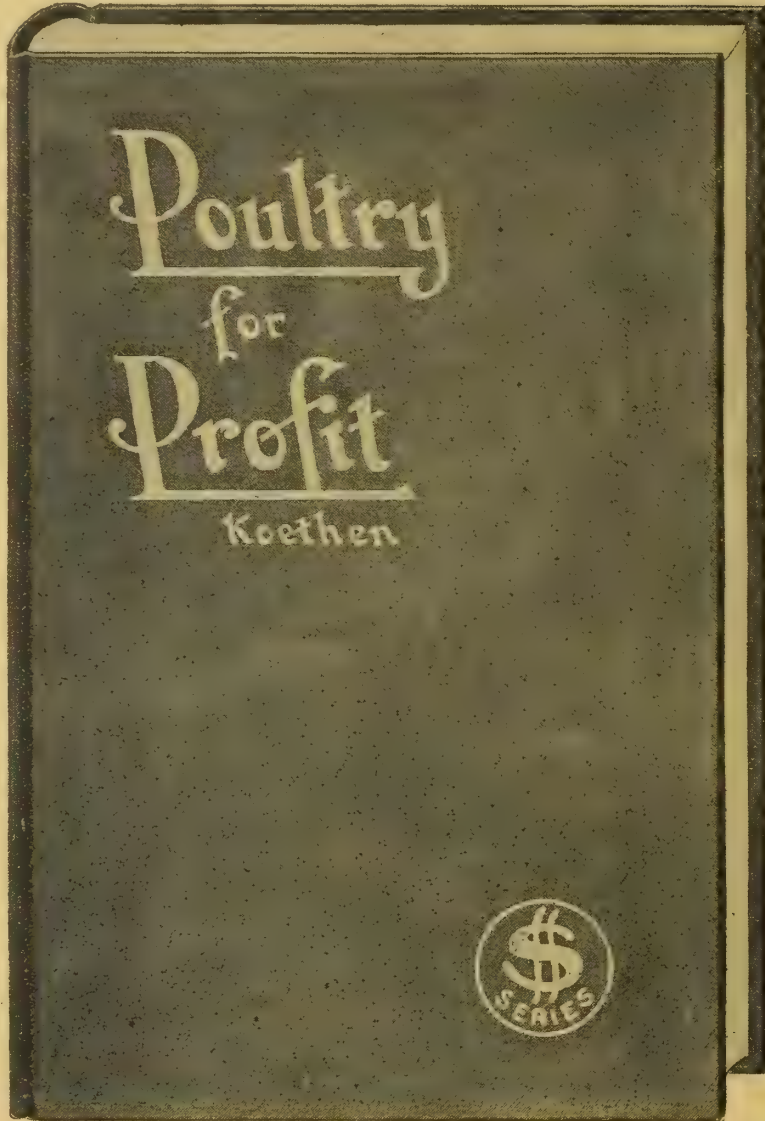
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by
Jean A. Koethen



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A brand new book on poultry published by that old reliable Cultivator Publishing Co., Los Angeles. The author, Jean A. Koethen, has really written a poultry book worth while. The different subjects are treated with a directness that is refreshing, after reading so many books that say so much and mean so little. The book is intended for the beginner and farmer, but we commend it most heartily to anyone interested in poultry; whether for pleasure or profit; it is full of good things from cover to cover.

THE LOS ANGELES TIMES SAYS:

The author of this manual has covered the subject fully, giving the salient features and practices of an enlightened poultry culture as it applies to California conditions, based largely on personal experiences, and intelligent compilations from recognized authorities.

THE RIVERSIDE PRESS SAYS:

The Press is in receipt of a copy of this work, called "Poultry for Profit," and has no hesitation in commending it to either the "backlotter" who keeps a few chicks for his own pleasure, to the fancier who works to the "standard," and to the commercial poultryman who makes a business of poultry culture. Before its publication, the manuscript of "Poultry for Profit" was submitted to practical poultrymen, to experts and simple poultry enthusiasts, and all agreed that it was more comprehensive, more readable and vastly more helpful than any similar poultry book yet published. It covers the widest range, discussing breeds, feeds, diseases, housing, marketing and answers the thousand and one questions that even the expert poultryman sometimes has to ask and the amateur is ever asking.

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The Cultivator Publishing Co., Inc.

115-117 N. Broadway

Los Angeles, Cal.



The Household Department



AT BEST

The faithful helm commands the keel,
From port to port fair breezes blow,
But the ship must sail the convex sea,
Nor may she straighter go.

So, man to man, in fair accord,
On thought and will, the winds may wait;
But the world will bend the passing word,
Though its shortest course be straight.

From soul to soul the shortest line
At best will bended be;
The ship that holds the straightest course
Still sails the convex sea.
—John Boyle O'Reilly.

MOTHER

Written for California Cultivator
by J. H. P.

THE woman laid the dress across a chair near-by. A strange apathy seemed to steal over her as the fingers loosened their hold on the finished work.

In the open doorway appeared a bright, girlish face, and an eager voice exclaimed:

"O mother! You did get it done, and in time, too!" I'm all ready to put it on."

The woman, leaning back in her chair, hands clasped listlessly in her lap, watched the girl but offered no help. She was not even thinking of the new dress.

"Look, papa," said the girl as a man came through the doorway, "isn't it pretty? A new dress out of two old ones. No one but mother could have done it."

"That's a fact," was the hearty response. "It takes mother to make something out of nothing."

The woman listened dully, the words filtering slowly through her tired brain. It seemed that all her life she had been doing what they implied. Tonight the truth jarred upon her.

"I will put the boys in bed before we go, Mary," said her husband. "You seem all tired out."

"Yes, and I will straighten up the room," said happy, thoughtful Marian. "You just sit still and rest, Mother."

Mechanically she watched their movements.

At last the home was quiet. The younger children were in bed, the husband and daughter gone to the evening's entertainment in which each had a part.

Closer to the fire the woman drew her chair. Long she sat there motionless. The room was in shadow save the firelight from the open grate. In the farthest corner of the room, where the shadows met and blended, a somber form seemed to emerge, to pause irresolutely and to beckon. Over by the fire the woman shivered. Then slowly she raised her eyes from the coals and looked, unwillingly but steadily, into the corner. She grew very calm, though her deep, deep eyes questioned earnestly.

"Well?" at last her heart murmured low.

"I have come."—Silence in the hushed room—"This is the end."

Was that the soft rustle of the wind through the trees, or did the shadow speak? Steadily the woman looked,

quietly she answered as by the breath of a thought.

"Yes, I know. That is the way my mother went." She felt the life blood ebb slower and still slower. Then her thought began to quicken just a little.

"The end?" she murmured, "and is this all?"

She stirred uneasily. "I had meant to do so much," apologetically. "My work is not finished. Must I leave it? Is this really all?"

From the shadowed form came the faint echo, "All."

"I am very, very tired," she muttered. "If I could only rest."

A reverie stole upon her, wrapping her close and warm. She must think a little. What had she done that was worth while?

Her childhood, happy and innocent. Her girlhood, a conquering one, wrestling success from stubborn odds—the support of her mother and sister. Ah, that had been worth while. Then her marriage—life in a new country—the clutch of discouragements and failures. Slowly her thought trailed through the last 15 weary years. Despite everything they had won! Rather, her indomitable courage had won. "Cannot pay? we will go without," had been her constant watchword, her talisman. With ingenuity and skill taxed to the utmost they had won. "Something out of nothing?" No note of praise in the words tonight, only a strange mockery. Out of nothing? Oh no! out of the costliest fabric of all. Her own strength and vitality had gone to pay the debts of these years. Recklessly, thoughtlessly she had mortgaged herself.

Now the sheet was to be balanced. The account was to be closed. This was the end.

The woman stirred uneasily. She turned away from the shadowed corner and questioned the coals mutely.

"What will they do without me?" A little faster pulsed the blood, propelled by the thought. All the work she had been doing, the thoughtful, loving care, who would give it now? How would they plan now?

The endless order of work, week after week, day after day, rose from the coals and comforted her. First, the washing. How weary of late she had been, how the Mondays had chased each other, giving her no time for rest between. True, her husband had lately urged buying a good machine and having a power plant, but she had swept the suggestion away with the old plea of not being able to afford it, completely forgetting the human machine that could not be replaced. But now, oh yes, now, he must plan everyway to save Marian's slight frame from too heavy a task.

And the sewing? No one else would contrive and save as she had done. It was out of the question. Ready made clothing? Or a woman to sew by the day? On and on her mind sped, planning each detail of their life to be, the life when she would not be with them.

Suddenly she roused herself. What about the soul life? Who would care for that? Marian was just budding into young womanhood. She needed her mother more now than in babyhood. Oh, who would watch the young feet

and tenderly point out the right path? Who? who?

She half turned and looked accusingly at the now shrinking figure in the corner.

And the two little boys—what temptations might now come to them, when her counsel was hushed?

Her husband—how young and handsome he had seemed of late! The burdens that had sapped her very heart's blood, had slipped from his shapely shoulders.

Why? why?

Money to do all these things afterwards? Then there was money now. She was not old. Forty-five was not old. She ought to be young and strong and happy. She must be. She would be!

Pleading hands were held out, the life blood coming now with throbbing flow. Oh, she would laugh and play again. She would save her strength—she would rest—and rest—till all the weariness fled. Dared she hope?

Her eyes were shining with the eternal love of motherhood, her lips parted in a smile of hope, as eagerly she awaited the answer. Was that the tree against the pane? Or did the fading figure echo the word, "Perhaps?"

The coals had died out, the ashes lay cold and lifeless on the hearth when the husband and daughter returned. Coming into the room they found her—asleep in her chair. And over her face was drifting still the radiance of the smile.

CARE OF THE BABY IN SUMMER

A baby may be made uncomfortable and restless by various causes which are readily removed. Babies and young children frequently suffer from a thirst. They should be offered a drink several times a day, and particularly in hot weather. When a baby cries in the night a drink will often quiet him and send him to sleep.

Irritating clothing is at times responsible for the baby's fretfulness. Woolen socks or shirts or stiff cap strings are quite enough to spoil his comfort, even if he is well, and in hot weather especially a superabundance of clothing is frequently responsible for much real suffering.

Dress the baby in the lightest cotton garments and keep him as cool as possible. Do not be afraid to let him have nothing on but his dlap and one other thin garment on the very hot days.

Prickly Heat

One of the troubles from which a baby often suffers in summer is prickly heat. This ailment appears as a fine red rash usually on the neck and shoulders and gradually spreads to the head, face and arms. It is caused by overheating, due either to the hot weather or to the fact that the baby is too warmly dressed. The rash comes and goes with the heat and causes intense itching. The remedy for it is to take off all the clothing and give the baby a sponge bath in tepid water in which common baking soda has been dissolved. Use one tablespoon of soda to two quarts of water. Use no soap and do not rub the skin but pat it dry with a soft towel. After the skin is thoroughly dry dust the inflamed surfaces with a plain talcum powder.

This ailment, like all others, is more readily prevented than cured. Frequent cool baths, very little clothing, simple food and living in cool rooms or in the open air will probably save the summer baby from much of the

annoyance of prickly heat and other serious ills.

Chafing

Fat babies are very apt to suffer from chafing, especially in hot weather. It appears as a redness of the skin in the buttocks or in the arm-pits, or wherever two skin surfaces persistently rub together.

Much the same treatment is required as in prickly heat. Never use soap on an inflamed skin. Instead use a soda, bran or starch bath. Directions for these baths are given in a publication called Infant Care, which may be had free of charge by addressing a request to the Chief of the Children's Bureau, United States Department of Labor, Washington, D. C.

IDEAS FOR THE COOK

Written for California Cultivator
By Isabel Cottle

Breakfast

Blackberries Cream
Corn Cakes Broiled Ham
Peach Butter
Coffee

Lunch or Supper

Cream of Corn Soup
Cheese Souffle Lima Beans
Watercress Salad
Nut Bread Baked Pears
Tea or Milk

Dinner

Beef Loaf Potato Pancakes
Spinach, Butter Sauce
Pineapple Ice Drop Cakes
Coffee

Corn Cakes

Make a custard from two eggs well beaten, one-half cup milk, one-half tablespoon shortening, and one-half tablespoon sugar; beat into this three-fourths cup of canned corn. Sift together twice seven-eighths cup flour, one tablespoon (level) baking powder and one-half teaspoon salt. Beat into other mixture and drop in greased muffin rings set in greased dripping pan. Bake in a moderate oven until done.

Beef Loaf

Mix together three pounds chopped raw beef, one-fourth pound minced salt pork (or a piece of chopped suet), one cup finely crushed cracker crumbs, two teaspoons each of salt and pepper. Moisten with two beaten eggs, a teaspoon each of onion juice and Worcestershire sauce. Work in two tablespoons melted butter and pack in a greased mold. Cover, set in a roasting pan of boiling water and cook in a steady oven for two hours. Serve with brown sauce.

Cheese Souffle

Put in a double boiler one cup of milk, one cup of grated American cheese, a tablespoon of butter, one-half cup of soft bread crumbs, one-quarter teaspoon salt, a little paprika and mustard. Cook for three minutes. Take from the fire and pour on the beaten yolks of three eggs. Fold in the beaten whites and turn into a buttered pudding dish; bake from 20 to 25 minutes in a slow oven. Serve immediately.

Potato Pancakes

Peel six potatoes and allow to soak in cold water about two hours. Grate and mix with them one large onion, also grated, two eggs, one-half teaspoon baking powder and enough flour to make a thin batter. Fry in cakes until a deep brown.

Screw-eyes placed in the tops of handles of brooms, brushes and mops, so that they may be hung on hooks in a closet, will allow a neater arrangement of cleaning utensils.

HELPS IN THE KITCHEN

Written for California Cultivator

By Martha

Make your old discarded newspapers serve you as labor savers, then burn the papers. Cover the table with papers before preparing a meal and wipe out all greasy dishes and pans with paper before washing them. The stove can be kept bright by rubbing off with soft paper after each meal. Mix stove polish with very soapy water and add a little turpentine and a little coffee, as it greatly improves the luster and prevents burning off. If the flue of the kitchen stove is choked with soot it can be loosened by throwing a piece of zinc on a hot fire and closing the lids.

A box or bucket with a cover is the only safe place in which to keep matches out of the way of children and mice, and unless they are kept in a safe place they may be the cause of a serious fire.

To clean cooking utensils that have burned, put in about a quart of wood ashes and boil thoroughly, then wash with hot suds. There is nothing better for cleaning steel knives or the steel of the range than wood ashes moistened with kerosene.

Here are two good ways to make sticky fly paper: Mix equal parts of rosin and castor oil, add a little sugar and spread the mixture on heavy paper, leaving a margin for handling. Or mix a cup of molasses and a half pound of glue and spread this on the paper.

To have good coffee, it is of the greatest importance that the coffee pot be kept perfectly clean. To cleanse the pot thoroughly boil in it for half an hour each week a strong solution of borax and water with a few shavings of soap added, then rinse out with clear hot water and place in the sunshine with the lid open. Keep the tea pot clean in the same way.

Fly paper and screens will help to keep flies out of the kitchen, and you can get rid of them almost entirely by breaking up their breeding places. This can be done by sprinkling a little powdered borax in the garbage can every day and by sprinkling a little of the powder where the can is kept and in any place around the house where slops have been thrown. While borax will not kill the adult fly, it will prevent all fly eggs from hatching.

It is a good plan to keep a strong borax solution in the kitchen, prepared by melting a bar of soap and then stirring in a heaping tablespoon of powdered borax and keeping in a closely covered fruit jar ready for use, as this soap is excellent for washing dishes and for keeping the tea towels soft and white.

A good mixture to set color in cotton material is one teaspoonful of turpentine, a handful of salt and a pail of cold water.—Washington Herald.

EASY TO GUESS

Vera (8 years old)—What does Transatlantic mean, mother?

Mother—Across the Atlantic, of course. But you mustn't bother me.

Vera—Does "trans" always mean across?

Mother—I suppose it does. Now, if you don't stop bothering me with your questions, I shall send you right to bed.

Vera (after a few minutes' silence)—Then does transparent mean cross parent?

—hostess to
the World

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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, August 25, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
First23

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
Arizona Longhorn17½
California Fresh13½
Cheddar20½
Domestic Swiss20
Eastern Daisy18½
Eastern Twins17½
Imported Swiss33½
Longhorn17½
Oregon Triplets15½
Tillamook15½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts.....29
Candled31
Petaluma—Santa Rosa30
Imported Fresh Extras.....30
Northern Fresh Extras.....32
Other Outside Stock.....28

Prices to producers:
Hens, lb.11½
Roosters, old9
Broilers, lb.17
Fryers15
Roasters, lb.15
Turkeys14½
Ducks12
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:
Hogs, 175 to 200 lbs., per cwt.....7.75
Prime Steers7¼
Helfers6¼
Calves, lb.8¼
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head4.75

POTATOES

Wholesale selling prices:
Sweets, yellow, lb.3
Northern Burbanks1.20
Red Shimas, bag.1.30

ONIONS

Wholesale selling price:
Bolling Onions, crate1.35
Brown, cwt.1.00
Crystal Wax, crate90
Red, cwt.1.00
Local Silverskins, lug.50
White Globe, lug.50
Garlic10
Sets, White and Brown, lb.10

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00
Beets, doz.1.10
Beans—
Wax5½
Limas3½
Green5½
Cabbage, sack70
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.40
Chicory, doz.40
Chives, doz.1.00
Corn, lug35
Cucumbers, lug30
Pickling, lug1.00
Egg Plant, lb.30
Escarole, doz.40
Horse radish, lb.10
Leeks, doz.40
Lettuce, doz.30
Mint, doz.40
Okra, lb.50
Onions, Green, bunch.20
Oyster Plant, doz.40
Parsnips, doz.35
Parsley, doz.15
Peas, Telephone40
Peppers—
Chili, Green30
Bells3½
Rhubarb—
Crimson Winter, box.75
Strawberry75
Spinach, doz.20
Squash—
Crookneck, box35
Hubbard, lb.20
Summer, lug30
Tomatoes—
Lug20
Turnips30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders75
Bellflower1.00
Gravensteins90
Skinner's Seedlings1.25
Crabapples, lug1.10
Avocados, doz.4.50
Bananas, lb.3½
Berries—
Strawberries, tray75

Blackberries, tray75
Raspberries, tray80
Cantaloupes—
Tip Top1.50
Paul Rose, crate1.00
Pineapple, crate1.25
Casabas, crate1.75
Cherimoyas, lb.20
Figs—
Calimyrna, box65
Black1.00
Grapes—
Black Hamburg, lug.80
Malagas, lug.80
Muscats, lug.80
Concord, 2-3 crate90
Thompson Seedless, lug.75
Tokay, lug1.40
Nectarines, lug1.00
Peaches—
Clings, box90
Freestones, box60
Elbertas, lb.1½
Pears, Bartlett, box1.50
Plums—
Climax, lug90
Kelsey65
Satsuma, lug80
Burbank, lug40
Tragedy, lug90
Pineapples, lb.4½
Quinces, lug50
Sugar Prunes, lug65
Watermelons, lb.1

CITRUS FRUIT

Wholesale selling price:
Lemons1.25
Juice Lemons1.00
Grapefruit, Seedless2.75
Limes, basket75
Valencias4.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes.7½
Apricots8½
Peaches5½
Pears, lb.11
Prunes8

NUTS

Prices named by California Walnut Growers' Association are:
No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Peanuts—
California, Raw6
Japan5½
Eastern7½
Rice Corn5.00

HONEY

Wholesale selling price:
Comb, Fancy, Water White.....16
White15
Extracted Water White.....8½
White7
Light Amber6
Beeswax25

RICE

Wholesale selling price:
California4.25
Broken2.75

BEANS

Wholesale selling price:
Producer's price not far from one dollar under these quotations:
Limas5.35
Bayous6.00
Lady Washington5.25
Pinks4.15
Black Eyes6.75
Lentils12.50
Small White5.25
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley Hay11.00
Wheat Hay10.00
Tame Oat11.00
Alfalfa10.50
Volunteer5.00
Straw4.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.20
Corn, White2.30
Wheat2.05
Oats, White1.90

Oats, Hulled2.25
Egyptian Corn2.10
Kaoliangs1.60
Barley Seed1.55
Barley, Hulled1.90
Kaffir1.85
Milo1.75
Sunflower Seed7.00

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Bran, Heavy1.80
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00
Beet Pulp1.20
Cracked Corn, cwt.2.25
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.80
Bone, Green1.75
Meat Meal3.00
Charcoal1.90
Oil Cake Meal2.50
Fish Meal3.15
Rolled Barley1.50
Rolled Oats1.95
Middlings2.10
O. & W. Middlings1.80
Feed Meal2.30
Scratch Feed2.20
Oyster Shell1.15
Scratch Gritlets2.40

San Francisco Market

SAN FRANCISCO, August 24, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Extras28
Prime Firsts26
Firsts25

CHEESE

Wholesaler to retailer.
Oregon, Y. Am.14½
Young America11½
California Flats8
Cheddar30
New York Cheddar20
Oregon Twins13½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Extras30
Select Pullets26½

Price to producer:
Hens, lb.14
Fryers23
Broilers26
Roosters—
Young23
Old10
Squabs2.25
Ducks12
Geese2.25
Belgian Hares, lb.6

LIVE STOCK

San Francisco prices, gross weight:
Steers40
Cows and Heifers30
Calves, lb., live wt.60
Hogs40
Wethers60
Ewes5½
Milk Lambs, lb.7½
Shorn stock, ¼c less

POTATOES

Wholesale selling price:
Burbanks, cwt.90
Delta75
Sweets, lb.20

ONIONS

Wholesale selling price:
Onions, cwt.40
Bermudas1.00
Australian Browns75
White, crate65
Wax, crate1.00
Garlic, new40

WEATHER CONDITIONS

For the Week Ending August 21, 1915.

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Temperature Data

	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Eureka	.00	.26	.14	66	52
Red Bluff	.00	.00	.00	104	64
Sacramento	.00	.00	.00	100	56
San Francisco	.00	.01	.01	72	50
San Jose	.00	.00	.02	90	52
Fresno	.00	.00	.00	104	60
Independence	.00	.04	.00	96	52
San Luis Obispo	.00	.01	.03	84	52
Los Angeles	.00	.00	.00	86	58
San Diego	.00	.00	.00	74	60

VEGETABLES

Wholesale selling price:

Beans—
String, lb.10
Limas, lb.20
Wax, lb.10
Corn, sack60
Cucumbers, lug20
Eggplant, lug35
Lettuce, crate50
Okra, lug40
Peas, sack1.25
Peppers—
Bell, box25
Chili, Mexican, lug.25
Rhubarb75
Squash—
Summer, lug25
Tomatoes—
Delta, lug25
Bay50

FRESH FRUIT

Wholesale selling price:

Apples—
Alexander50
Gravenstein70
Bananas, Hawaiian, bunch.1.25
Blackberries, chest1.25
Cantaloupes—
Turlock Ponies60
Turlock Standard75
Delta, lug40
Casabas, lb.1½
Figs, box, single layer, black.30
White, single layer.30
Grapes—
Thompson Seedless, crate40
Tokay, crate75
Muscat, crate50
Malagas, crate50
Huckleberries, lb.9
Nectarines, Red, crate75
Peaches—
Wrapped, box30
Small lug30
Strawberry Frees, lug.50
Pears, Bartlett, wrapped.1.00
Pineapples, doz.1.00
Plums, crate50
Prunes, crate60
Strawberries, chest1.50
Watermelons, doz.1.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, seedless2.50
Lemons1.50
Lemonettes1.25
Limes, Mexican, case.4.00
Tangerines, halves75
Valencias3.50

DRIED FRUITS

Wholesale Prices are:

PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, ¾c. All outside sections ¼c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Choice Fancy
Apricots5½c 6¾c 7¼c 7¾c
Peaches3¼c 3¾c 4c 4½c
Pears7c 8c 9c 10c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7¾c; 12-oz., 6¾c; 50-lb. cs., 6½c; Sultanas, 16-oz., 7¾c; 12-oz., 5¾c; 50-lb. cs., 6¾c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscates, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:

Nonpareil16½
I. X. L.14
Ne Plus13
Drakes11½
Peanuts—
Unpolished3½
Polished4½
Shelled, China5½
Italian Chestnuts6½

BEANS

Wholesale selling price:

Limas4.60
Pink3.55
Black Eyes3.55
Cranberry4.00
Small White4.30
Garbanzos3.50
Large White4.30
Bayou4.35
Manchurian Speckled Bayous3.80
Manchurian Butters4.50
Red Mexican5.40
Red Kidney5.90
Horse Beans2.00

HONEY

Wholesale selling price:

Comb, Water White, new14
Light Amber, new11
Amber, new10
Extracted White6½
Light Amber3½
Dark Amber2
Beeswax25

HOPS

1914

Wholesale selling price:	
Sacramento Valley	8@10
Sonoma-Mendocino	11 1/2@13
Oregon Clusters	11 1/2@13

HAY

Under date of August 21, 1915, Scott, Wagner & Miller say:

Receipts of hay for the past week were 3913 tons, about the same as last week. This is quite a reduction from the receipts of a few weeks back. Arrivals have sold to good advantage and have moved readily. With the dropping off of the receipts, it is generally conceded that an advance in price can be looked for, especially as there is a decided firmness to the market.

Export trade has been good and has taken large quantities for foreign markets. At the present time a large steamer is loading a full cargo of several thousand tons for Australia. This in connection with regular export business to Hawaii is bound to have its effect on this market.

The harvest is nearly over and it is noted that the alfalfa crop in the interior is much shorter than was anticipated. This will no doubt have a bearing on the price of grain hay throughout the season as feeders have been using a good percentage of their feed from the alfalfa crop, which will probably be the same price as grain hay.

The straw market continues without interest and offerings of this commodity are hard to place.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt. bales)	13.50@14.50
No. 1 Wheat or Wheat and Oat	11.50@12.50
No. 2 Wheat or Wheat and Oat	8.50@10.00
Choice Tame Oat	11.50@12.50
Other Tame Oat	9.00@10.50
Barley	8.00@10.00
Wild Oat	7.00@9.00
Alfalfa	8.00@11.00
Stock Hay	5.00@5.50
No. 1 Barley Straw	25@40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.70@1.72 1/2
Barley Feed	1.20@1.22 1/2
Barley, Old Crop Feed	1.02 1/2@1.05
Corn, Eastern Yellow	1.84@1.85
Corn, Egyptian White	1.85@1.90
Oats, Red, Feed	1.25@1.40
Oats, White, Feed	1.50@1.52 1/2
Millet	2 1/2@3 1/2
Flaxseed	5@5 1/2
Rye	2.00@2.25
Sunflower	5@5 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	15.00@16.00
Bran, ton	27.50@29.00
Feed Cornmeal	42.00@42.50
Cracked Corn	42.00@42.50
Rolls Barley, ton	26.00@27.50
Rolls Oats, ton	37.00@37.50
Middlings	32.00@35.00
Shorts	28.50@29.50
Olecake Meal	36.00@37.50
Cocanut Olecake Meal	22.00@23.00

Citrus Fruit Market

LOS ANGELES, August 25, 1915.

The Valencia market still continues very good, sales running from \$4.75 to \$5.40 for good stock and demand is excellent. Shipments, however, are very light.

There is no change in the lemon situation; the weather in the East continues very cool, with much rain, and until the weather changes there is no chance of better prices. Foreigners are also being received in heavy quantities.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 31,108 cars, lemons 5957, total 37,165. Last season same date, oranges 35,370, lemons 2638, total 38,008. From Tulare County to date, oranges 5649, lemons 202, total 5851. Last year same date, oranges 5875, lemons 31, total 5906. From northern counties, oranges 630, lemons 2. To same date last season, oranges 404, lemons 5.

NEW YORK, Aug. 23.—Twelve cars Valencias, six cars lemons sold. Market is firm on both oranges and lemons. Weather fair.

VALENCIAS—	
Cream, C. M. Brown	Avge. \$4.05
Minnehaha, C. M. Brown	3.95
Blue Flag	3.60
Blue Bell	3.45
Old Mission, xf., Chapman	5.45
Old Mission, fy., Chapman	5.10
Golden Eagle, sd., Chapman	4.65
Lady Rowena, Chapman	4.05
Defiance, Ball & Tweedy	4.85
Condor, Ball & Tweedy	4.45
Crown	4.05
Orchard, National O. Co.	4.85
Standard, National O. Co.	4.40
Glendora Alps, A.C.G. Ex.	5.10
Glendora Home, A.C.G. Ex.	4.85
Cal. Belle, S.T. Ex.	5.40
Carmencita, S.T. Ex.	4.90
Colombo, S.T. Ex.	4.60
Rossmoyne Grove, S.T. Ex.	4.85
Girl, S.T. Ex.	4.55
Duquesne, A.C.G. Ex.	4.30
Old Mill, A.C.G. Ex.	4.30
Glendora Heights, A.C.G. Ex.	4.85
Evolution, A.C.G. Ex.	4.40
Paul Neyron, S.9. Ex.	4.60
Glendora Home, A.C.G. Ex.	4.55
Monopole, A.C.G. Ex.	3.75
Aurora, Amer. Ft. Dis.	4.70
Sapho, Amer. Ft. Dis.	4.55
LEMONS—	
Limoneira Co., Selected, vent.	Avge. \$2.90
Excellent	2.45

Sunside	2.15
Pride of Corona	3.25
Exposition, ventilated	2.20
Mission, ventilated	2.10
Panama, ventilated	1.60
Festival, ventilated	1.90
Flower City, ventilated	1.50
Las Fuentes, ventilated	2.30
Monticello Valley, ventilated	2.15
Squirrel	2.10

ST. LOUIS, Aug. 23.—Three cars sold. Market steady on Valencias, weak on lemons.

VALENCIAS—	
Progressive, Or. Ex.	Avge. \$3.50
S.S. Brand, Or. Ex.	4.10
Compass, Or. Ex.	1.30
Fountain	.90
Rough Diamond, V.C. Ex.	1.35
CINCINNATI, Aug. 23.—Three cars sold. Market is easier on lemons.	
LEMONS—	
White Cross, V.C. Ex.	Avge. \$1.80
As-You-Like-It, L.G. F.G.A.	1.65
Growers	.75
Pet, S.D. Ex.	1.90
Arab	1.35
Pup	.85
Duck	.50

BOSTON, Aug. 23.—Eight cars sold. Market is doing better on Valencias, unchanged on lemons.

VALENCIAS—	
Colombo, S.T. Ex.	Avge. \$4.95
Las Palmas, S.T. Ex.	4.35
Martha Washington, Or. Ex.	3.55
Cowboy, Or. Ex.	4.50
Echo, S.T. Ex.	5.10
Arroyo, S.T. Ex.	4.40
Rey, S.T. Ex.	5.05
Tunnel, S.T. Ex.	4.60
Mountain Girl, S.T. Ex.	3.75
Mountain Girl, marked X	3.35
LEMONS—	
Envoy, Q.C. Ex.	Avge. \$2.75
Maverick	2.65
Whittier, S.T. Ex.	3.10
Pico	2.50
Selected, V.C. Ex.	3.15
Loma	2.90
Homer, Q.C. Ex.	2.30
Questa	1.95
SWEETS—	
Tunnel, S.T. Ex.	Avge. \$2.50

PHILADELPHIA, Aug. 23.—Six cars sold. Market is strong on Valencias. Unchanged on lemons.

VALENCIAS—	
Mt. of Olives, Growers Ft. Co.	Avge. \$5.40
Olive Heights, Growers Ft. Co.	4.90
Angeles, Growers Ft. Co.	4.75
Big Four, Growers Ft. Co.	4.40
Rialto Brownie, Rialto Ft. Co.	4.20
Rialto Boy, Rialto Ft. Co.	3.40
Saddleback, Or. Ex.	4.30
Foothill Beauties, Or. Ex.	3.50
Golden Beaver, Or. Ex.	4.45
Saddleback, Or. Ex.	4.25
LEMONS—	
Envoy, S.D. Ex.	Avge. \$2.00
Maverick	1.85
Greyhound	1.80

CLEVELAND, Aug. 23.—Four cars sold. Market is lower on Valencias, unchanged on lemons.

VALENCIAS—	
A One, Amer. Ft. Dis.	Avge. \$4.35
Jupiter, Amer. Ft. Dis.	3.85
Don Quixote, S.T. Ex.	4.20
California, S.T. Ex.	3.30
No name, S.T. Ex.	2.85
LEMONS—	
Queen Bee, Q.C. Ex.	Avge. \$1.70
Royal	1.20
Questa	1.35

THE SCIENCE OF AGRICULTURE

By John Bayard Coulter in Kansas' Industrialist

Agriculture has become a science. In the past men found that certain things they did to plants changed them; some of these changes were improvements, and so the crops were improved. Nowadays men are finding out more than that. They are finding out why plants change. They are learning just what to do in order to get the results they want. They are learning how to breed plants just as they have bred horses and cattle. They are finding just what to do in order to make the fields yield more than they did before, and they are finding how to make farm plants grow where they never grew before.

It is the knowing why as well as how that makes agriculture a science. Success in farming depends very much on knowing why plants behave as they do; why the doing of certain things produces good results, and why the doing of other things produces poor results. Farms cannot be run best by rules alone. Each field is a problem in itself, and the farmer needs to know how to solve his problems for

himself. To do this he must understand the principles of plant life. He must understand the conditions which are most favorable to plant growth and learn to recognize what conditions are unfavorable to it. He must understand why it is that crop plants gradually poison the soil for themselves and why it is an advantage to change the crops. He must understand why plants of the clover family increase the fertility of the soil and why it is that deep plowing and frequent crumbling of the surface also increase it. He must understand the principles which should guide him in the choice of the seed which he plants. He must understand how to encourage that invisible plant life in the soil which helps his crops and how to combat that parasitic plant life above the soil which injures his crops by causing crop diseases.

IRRIGATION FARMING

"Irrigation Farming," a hand book for the proper application of water in the production of crops, written by Lucius M. Wilcox, editor of Field and Farm, published by Orange Judd Company, New York, at \$2.00. The Cultivator will be glad to secure the book for the subscribers at the above price or, including one year's subscription to the Cultivator, at \$2.75.

"Till and keep tilling" is the most potent axiom of the 20th century. I have depreciated shiftless methods as derogatory to the best success and have condemned the practice as inexcusable as the wanton waste of water itself. This is a most sensible declaration from the preface of "Irrigation Farming." Mr. Wilcox states that he has had 25 years' field experience in the handling of water and he shows the worth of his experience by the axiom which he so aptly quotes. Where dry farming is possible, or rather where irrigation farming is impossible, methods of dry farming aid in increasing our wealth, but vastly more wealth comes from irrigation. Unfortunately many irrigationists demand too much water and too little tillage and the result is ultimately soil destruction.

The various questions which come up in irrigation farming are most satisfactorily answered in Mr. Wilcox's book. It comprises 24 chapters and a glossary of irrigation terms. The chapters touch upon history of irrigation, its advantages, relation to soils, treatment of alkali, water-supply, canal construction, reservoirs and ponds, pipes, flumes, duty and measurement of water, methods of applying, field crop irrigation, garden and orchard irrigation, vineyard and small fruits, alfalfa, windmills and pumps, devices and appliances, subirrigation and subsoiling, seepage and drainage, electricity in irrigation, irrigation in humid climates, winter irrigation, law of irrigation, etc.

There are more than 100 helpful illustrations in the book.

ADVANTAGE OF A FOREST COVER

We have a letter from Mr. Franklin H. Heald of Oak Grove Valley, San Diego County, in which he severely criticizes the attitude of the national

forest service in maintaining a cover over the mountain slopes in California. He writes:

"True, the greatest asset of Southern California is its water supply but I think I can show any thinking person that if this water supply is to be conserved its watershed must be free from a covering of brush and other worthless growth which robs it of its moisture. A piece of land which does not raise a crop of weeds or grain or brush will remain damp all summer, especially if harrowed two or three times, but if it raises a crop of weeds, brush or grain the moisture is all taken out of the ground. Especially is this true in the case of brush which is not cultivated."

We are compelled to take exception to Mr. Heald's claim that the loss from growth on mountain sides is greater than the value of moisture conserved. It must be admitted that growing vegetation on the mountain-side causes loss by evaporation, it also must be admitted that it causes much less evaporation through shading of the soil, but the one great saving from growth on watersheds is due to dead leaves and mulch preventing the rapid run-off which always follows a burned hillside. The burning off the growth of our mountains, much of which has been due to carelessness, is nothing short of criminal and must be discouraged in every way, for if the millions which come to California from the sale of her oranges and other fruits are to be continued her watersheds must be protected. Doubtless there are cases where lands adjoining these reserves are injured because such places harbor pests which destroy some crops, but the greatest good to the greatest number demands the maintenance of hillside coverings.

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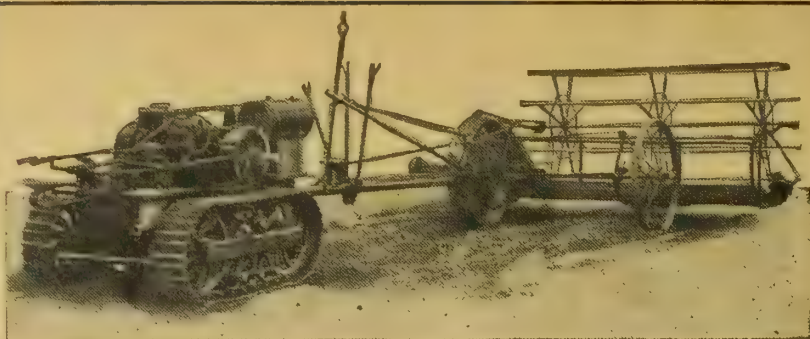
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How would you like a Tractor that will do your plowing with 3 14-inch bottom plows, operating on cheap fuel, No. 1 distillate, consuming one and one-half gallons per hour and during that hour plow one acre? This performance may be a gauge to you of other work that may be performed with this Bullock Creeping Grip Tractor that sells for \$1100.00.

The purchase of this moderate size Tractor will prove a profitable investment. The first cost is less than the equivalent power in horses; the operating expense is far less than the horse equivalent and no expense is entailed while idle.

The "Creeping Grip" has that oscillating feature combined with a perfect balance that enables it to traverse rough, uneven ground, and at all times maintain its grip. The traction is perfect, there is no slippage.

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Catalogues of this and larger size tractors for the asking.

Bullock Tractor Co.

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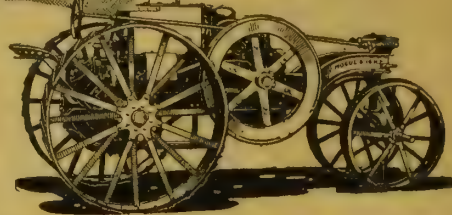
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\$675 Mogul 8-16 \$675
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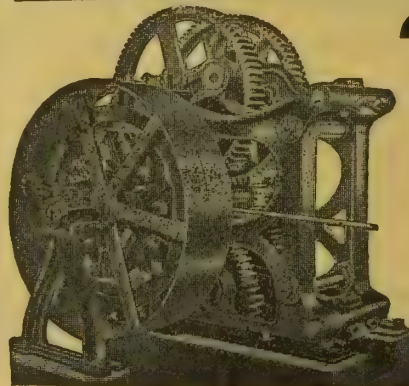


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Will record at what time your water was turned on, how much was started, every variation of flow, and when it was shut off.

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SEP 2 - 1915

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

September 2, 1915

SAN FRANCISCO

Scenes at the University Farm

See Article on Page 226, Which Gives Information Regarding Short Courses Which are to be Held on the Farm in October



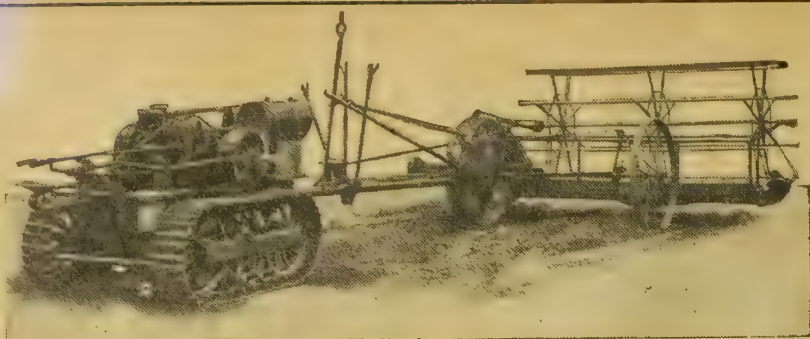
Open Air Meeting



Entomology Class at Field Work



The upper and lower pictures show the dining hall in the center. The other buildings are dormitories which have accommodations for 291 pupils. The dining hall seats 400 persons at one time. In the lower picture the small office building at the right is the dean's office.



"Creeping Grip" Tractor of General Utility

Tractors of moderate size are proving their great utility and giving good results to the grain rancher as well as to the bean and beet grower. The Bullock Creeping Grip Tractors, equivalent of six to eight horses on soft ground, are delivered to Southern California ranchers for \$1100.00, freight paid by Bullock.

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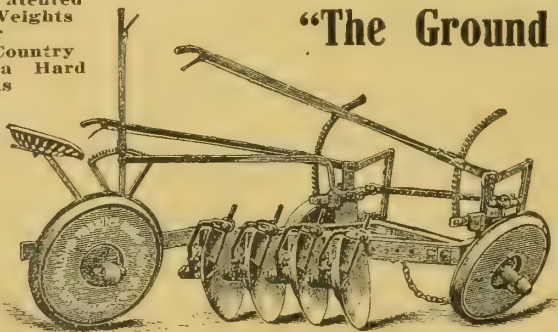
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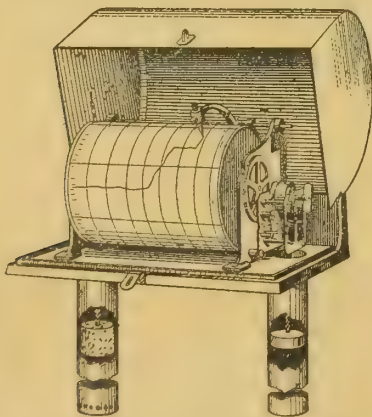
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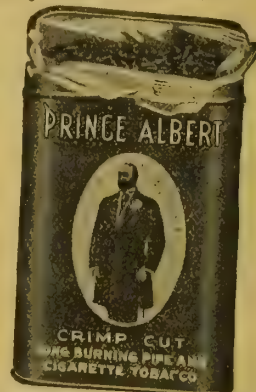
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Gentlemen, here is the friendliest smoke a man can put in his pipe or roll into a cigarette. We know, *men everywhere* know, and *you'll know* that what we tell you is government-bond-good just as soon as you prove it out in your pipe or cigarette! We tell you our printed word has never yet struck within 50% of what P. A. will produce in tobacco satisfaction for you!

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See Announcement at Head of Editorial Page

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 10

LOS ANGELES: THURSDAY, SEPTEMBER 2, 1915

One Dollar Yearly

Cover Crop as Soil Renewer

R. S. Vaile of the Riverside Citrus Experiment Station Writes of Experiments Which Have Been Conducted for Several Years with Various Green Manure or Cover Crops. Valuable Information Regarding This Method of Making Soil More Productive



CONSIDERABLE attention has been given in these columns and elsewhere to the results to date of the fertilizer and covercrop experiments conducted by the experiment station at Riverside. There is one comparison which has not so far been made in print between blocks fertilized in various ways but clean cultivated and blocks on which winter leguminous covercrops have been grown. The present appearance of the trees on these blocks growing green manure crops is so strikingly superior to that of the clean cultivated plats that we feel justified in drawing certain definite comparisons between them. Most of the readers are familiar with the outline plan of the experiments on the station grounds. For the benefit of those who are not we would say that a certain number of trees of the various varieties, Navels, Valencias, and Eureka and Lisbon lemons, are grouped together in a single block with a guard row surrounding them. All of these various plats are cultivated and irrigated exactly alike, the only difference being in the method of fertilization.

The plats which we will compare have been treated as follows from the standpoint of fertilizers.

Plat A has received nitrogen, phosphoric acid and potash every year since the trees were planted. During the seventh year this plat received 1.35 pounds of actual nitrogen from nitrate of soda, blood and bone, 2.75 pounds phosphoric acid from bone and 1.35 pounds potash applied in the sulfate form.

Plat B has received no fertilizer of any sort since the trees were planted.

Plat C received in its seventh year 1.35 pounds of actual nitrogen applied in the form of blood.

Plat F received stable manure only, at the rate of 6½ cubic feet per tree.

Plat O received 6½ cubic feet manure and 5½ pounds raw rock phosphate per tree.

Plat U received 4 cubic feet manure, raw rock phosphate and has had a leguminous covercrop grown every year.

The yields for the seventh year show very strikingly the advantage of the addition of organic material to the soil. Both in oranges and lemons the plats with the covercrop are far better

in total yield and in percentage of first grade fruit than any of the other plats, and coupled with this, the percentage of treeripe fruit is very much smaller in the case of lemons. The following table shows the yields for the seventh year together with the percentages showing various commercial grades. Coupled with the results obtained on these different plats is the fact that

covercropping with a leguminous plant is far and away the cheapest method of adding organic matter and nitrogen to the soil. We will not attempt at this time to point out the reasons why these results follow the use of a leguminous crop, but we feel that the results themselves are striking enough to be called to the attention of orchardists in as wide a way as possible:

Lemon Yields, August 1914-July 1915 (Inc.)

Treatment.	Total lbs. per tree.	Per cent Fancy.	Per cent Choice.	Per cent Standard.	Per cent Culls.	Per cent T. R.
U. Covercrop, Manure, Rock Phosphate..	282	22.8	36.2	26.7	1.5	12.7
O. Manure, Rock Phosphate	269	19.1	30.1	17.3	14.7	18.3
F. Manure	258	16.0	23.5	23.9	13.8	22.6
C. Blood	237	20.9	23.5	12.4	13.2	29.6
A. Complete	220	17.3	22.7	14.2	14.1	31.0
B. Unfertilized	51	7.4	30.2	29.0	10.0	23.0

Orange Yields, August 1914-July 1915 (Inc.)

Treatment.	Total lbs. per tree.	Per cent Fancy.	Per cent Choice.	Per cent Standard.	Per cent Culls.	Per cent T. R.
U. Covercrop, Manure, Rock Phosphate..	165	54.6	28.2	15.1	2.7	.....
C. Blood	123	37.4	36.8	22.4	3.3	.....
A. Complete	111	39.3	33.6	24.1	6.1	.....
F. Manure	109	42.8	34.2	20.6	1.9	.....
O. Manure, Rock Phosphate	103	37.0	32.5	21.7	2.7	.....
B. Unfertilized	26	30.5	42.2	29.4	4.3	.....

Sacramento Valley Potato Notes

Written for California Cultivator by W. S. Guilford



GOOD many potatoes have been grown in the Sacramento Valley north of the delta section this season.

Some were planted early, made a good crop and sold for a good price. Others were planted later and because of the late rains and the cool, backward spring made a good crop, but came into the market after prices had dropped, and sold for about one cent per pound instead of three or four as the early crop brings. And other fields were planted so late, April and May, that the tubers did not develop satisfactorily in the hot soil. They were of poor quality and almost unmarketable for anything but hog feed.

I know of one small lot that was planted in February in sandy river bottom land, whole seed being used, and potatoes big enough to use were

dug from the patch 60 days later. These were Early Rose. They were not all dug then but continued to increase in size for some time. The seed came from Oregon and was very free from disease. I never saw finer looking plants.

For the early crop early planting is imperative. Some lands cannot be worked early enough to make potato growing a wise venture one year with another.

There was considerable damage from wireworms and some of the late potatoes were shriveled by the heat before they were dug.

An uneven moisture supply made other lots of late planted early potatoes very warty. The moisture content of the soil must be ample for the needs of the plant at all times or uniform development cannot be expected. A careful potato grower is con-

stantly digging in the soil to see what the moisture condition is. A soil may look somewhat damp and yet be too dry for the best development of the plant. One test for moisture is to compress a small quantity of soil in the hand. If it stays firmly in place it is generally moist enough, if it crumbles down as soon as the fingers are taken away it is altogether too dry. A soil may just barely stand moulded to form and yet be too dry. Judgment is required in making a simple test like this. Experience soon shows the right amount of moisture. Another good test is the color of the plant. If the leaves are a healthy, medium green the supply is generally ample; if a blackish green it is becoming too dry; a light yellowish green indicates too much moisture.

Potatoes saved from the early crop will be planted for the late crop soon.

I saw one lot planted in July, the seed taken from potatoes just dug. The soil has been very hot and they have not yet come up.

This bears out E. H. Grubb's belief that it is necessary for the potato to go through a resting stage before being planted again. He thinks the best results will come from the use of seed grown at a northern latitude or a high altitude and held in cold storage for the summer planting.

An ample supply of moisture must be provided for this late crop; in most cases this can probably be done by one or more thorough irrigations before the crop is planted.

Where to market potatoes grown in the upper Sacramento Valley is a problem that has not been solved, aside from supplying the local markets.



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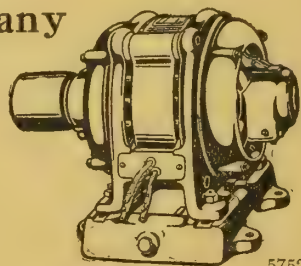
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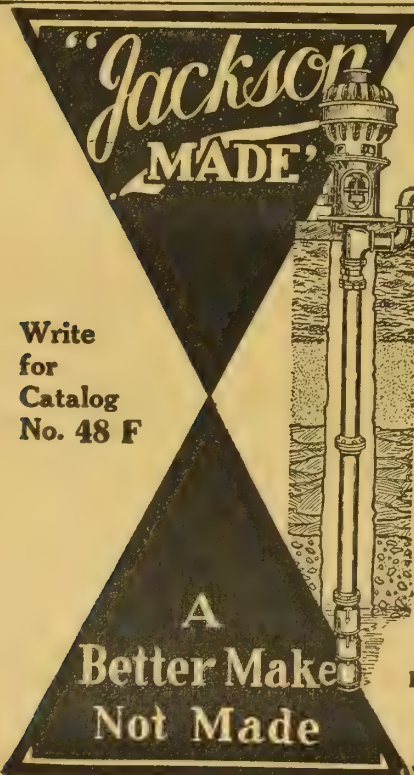
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UNFERMENTED ORANGE AND LEMON JUICES

Written for California Cultivator
By Professor W. V. Cruess, University
of California

TO many people the various drinks appearing on the market as "orangeade" are orange juice. "Orangeade" is nothing more than a cheap artificial drink made up of citric acid, sugar, artificial color, and orange oil as flavor. Real orange juice must compete with the "orangeade" in quality; it cannot compete in price.

A genuine orange juice of much better quality than the artificial product can be made from cull oranges, but as yet the flavor of the true

it can be crushed and pressed in the same way as apples. It is estimated by those who have peeled oranges that it costs about \$5 per ton to hand peel. The peels can be used for oil to offset cost of hand peeling. Experiments are now being conducted at this laboratory on peeling machines. The results are not complete enough for publication, although one type of machine seems very promising.

The juice may be strained to remove pulp through a coarse weave bag.

Bottling Cloudy Juice

The juice may be put into bottles in an unmodified cloudy condition, or it may be sweetened slightly by



One Type of Hand Power Bottle Capper.

orange juice has not been carried over into the finished juice perfectly. It can be put up in two forms, cloudy and clear.

Effect of Ripeness on Flavor

Experiments have shown that juice from fruit gathered at the beginning of the season will become exceedingly bitter a short time after pressing from the fruit. The juice is sweet when first pressed but becomes intensely and disagreeably bitter on standing. On the other hand juice from fruit towards the middle of the season and thereafter to the close of the picking period will not become bitter after pressing. These facts should be kept clearly in mind.

Expressing Juice from Oranges

No entirely satisfactory peeling machine is on the market. The juice may be extracted from the halved fruit as mentioned in a previous article on pomelo juice. Or the fruit may be sliced, crushed, and pressed in a cider or grape press, skins and all. Some oil gets into the juice by this method, and there is a very slight bitterness extracted from the white part of the skin. Juice extracted by this method is not so palatable as that extracted from the halved or peeled fruit. If the fruit is peeled

adding five parts sugar to each 100 parts of juice. This may be measured by volume conveniently.

A better method still is to blend orange and lemon juice in the ratio of about one part lemon juice to five parts orange juice. To this is added approximately seven parts cane sugar to 100 parts of the blend by volume. The lemon juice adds an agreeable freshness to the juice and the sugar seems to aid in retaining the fruit flavors.

Dark colored bottles are best, as they protect the juice against light. (Mr. Kingsbury of Relands, a pioneer in citrus juices, is responsible for this discovery.) The ordinary beer bottle or soda water bottle or grape juice bottle with their respective types of Crown, Goldy, or other reliable type of patent caps will be found satisfactory. (See article on pomelo juice, California Cultivator, May 20, on use of patent caps.) Ordinary bottles and plain corks previously boiled in water may also be used.

Use of Sulfurous Acid

The flavor of the juice is more permanent if a small amount of sulfurous acid in the form of potassium metabisulfite dissolved in water is added to the juice at pressing. About four

ounces of the potassium metabisulfite per 100 gallons is sufficient. This is 4-100 ounces per gallon. For home use it may be omitted.

Clarified Orange Juice

The simplest method of clearing the juice is to allow it to stand till coagulation of the yellow portion takes place. This will be 24 to 72 hours. The amount of metabisulfite recommended above prevents fermentation during this period. The juice can then be filtered very easily, through a paper filter or bag filter or other suitable type of filter.

A second method of clearing the juice is by filtration through a high grade of infusorial earth such as is obtainable under certain proprietary names in California. About six to eight ounces per gallon is mixed with the juice, and the juice is then filtered through any filter available. The earth causes coagulation or clotting of the cloudy material and renders filtration easy and complete. A high grade of clay must be used or a disagreeable flavor may result.

A third method of clearing is accomplished by grinding very finely about six to eight ounces of Spanish clay per gallon of juice. The clay and juice are agitated and mixed with the hands till a homogeneous muddy liquid results. Left to stand 24 hours, it settles clearly and the liquid will filter easily. The cleared juice may then be bottled as such or can be blended with a small amount of lemon juice and sweetened to taste.

Pasteurizing

Pasteurize in same way recommended for pomelo juice. (See California Cultivator, May 20, 1915.)

Lemon Juice

The lemons need not be peeled. Simply slice or crush and press out juice from whole crushed fruit. Add about five ounces potassium metabisulfite per 100 gallons of juice to prevent darkening and loss of flavor by oxidation. Clarify by adding six to ten ounces finely pulverized Spanish clay to each gallon of juice, working it up thoroughly into thin mud; allow it to settle 24 hours; decant off clear juice and filter sediment. Bottle and pasteurize as with pomelo juice. (See California Cultivator, May 20, 1915.)

The juice may be improved by adding ten parts sugar by volume to each 100 parts juice before bottling.

AVAILABLE PHOSPHORIC ACID

By R. R. Snowden

Reviewing your article on "Available Phosphoric Acid" in your issue of March 11 last, I wish to dissent from some of the conclusions reached by the author.

I feel quite positive that in the presence of carbonic acid, so universally present in agricultural soils, there can be no reversion of the water soluble and reverted phosphoric acid to the so-called insoluble form, for even with the powerful base, soda, this does not take place under this condition, but the farthest reversion is to the intermediate or "reverted" stage. That is, the product is di-sodium, corresponding to the di-calcium phosphate.

But even if the reversion should proceed to the so-called insoluble form of calcium phosphate, I hold that the usefulness of superphosphate is not thereby seriously impaired, for before reversion the soluble phosphate is distributed over the soil grains, and then presents a far greater surface for the action of the soil and plant root solvents. It is then precipitated in a condition of fineness that is not easy

to approach by mechanical grinding. Indeed it must be of molecular fineness when precipitated by the lime carbonate of the soil.

Furthermore I claim that the soil is not made acid by the application of superphosphate so long as any lime carbonate remains in it.

I also claim that gypsum does not render the soil acid. Its power to correct the strong action of sodium carbonate is due to the fact that the products of double decomposition between the latter and the gypsum are the neutral sodium sulphate and the almost insoluble lime carbonate.

I agree with and wish to emphasize some of the other statements of the author, however.

Twenty-five years ago the writer advocated the use of the "soft" phosphates of Florida without treatment with acid. The material, which is probably much finer than the rock is ever ground, is amply soluble in carbonic acid in the laboratory tests, and from experimental evidence on the farm this statement is abundantly verified. Some day this material will be brought in shiploads to this coast for agricultural uses, and doubtless would have been extensively used long ere this but for the adverse influence of the superphosphate manufacturers.

The author is quite correct as to the importance of the sulphur content of the soil since it is vitally necessary to the formation of albuminoids. In some soils I have found the deficiency of this element to be the limiting factor, decidedly curtailing fruit production.

The author is quite correct according to my experience, in saying that "thousands of dollars are annually wasted in blindly buying fertilizers."

KATYDIDS ON ORANGES

The department of agriculture is issuing Bulletin 256, a professional paper which we doubt not scores of Californians may secure by writing the department of agriculture, Washington, D. C. It is, "Katydid Injurious to Oranges in California," written by J. R. Horton and C. E. Pember-ton. The introduction reads:

"There are at the present time in the San Joaquin Valley of California over 43,000 acres of land devoted exclusively to the cultivation of citrus. The citrus strip lies along the Sierra foothills between Bakersfield and Fresno. Although some citrus trees have been grown in this area for more than 25 years, most of this great acreage has been planted in the last 15 years. The transformation of this strip of land from a semiarid grain-growing belt into an irrigated fruit-growing area has so changed the status of certain formerly obscure species of insects native to the locality as now to bring them into prominence as pests.

"One of the more important of these species is the fork-tailed katydid, Scudderia furcata Brunner. The amount of damage done by this insect has increased considerably since 1910, when it first came to the attention of the senior author. In 1912 it caused a loss in several orchards of a full fourth of the crop.

"Associated with the fork-tailed katydid in the orange groves and closely resembling it is the angular-winged katydid, Microcentrum rhombifolium (Sauss). This insect is also responsible for a certain amount of injury to orange trees annually, feeding voraciously, as it does, upon the leaves. It is, however, of much less importance than the former, and is

treated here rather because of close association with and resemblance to the fork-tailed katydid than on account of its economic importance. No distinction has heretofore been made between these two species in the orange groves of California."

The greater portion of the bulletin is given over to text and engravings touching upon the life history of these insects. The bulletin ends with the following:

"Recommendations

"On the basis of the foregoing results the writers make the following recommendations for the control of katydids on oranges in the San Joaquin Valley:

"1. Two applications of arsenite of zinc at the rate of 2 pounds per 100 gallons of water; or,

"2. Two applications of arsenate of lead at the rate of 4 pounds per 100 gallons of water.

"The first application should be made, at the latest, immediately after most of the petals have fallen; the second application, from ten days to two weeks after the first. If it seems desirable to spray for the citrus thrips also, lime-sulphur should be added to the above at the rate of 2 gallons per 100, and a third application of lime-sulphur only, at the same dilution, should be made about two or three weeks after the second.

"The cost of spraying will vary somewhat according to size of trees, cost of labor, team hire, insecticides, etc., but with ordinarily good management will not exceed five dollars per acre."

A DIFFERENT CASE

Visitor (consoling to Tommy, who has upset a bottle of ink on the new carpet)—Tut, my boy; there's no use crying over spilt milk.

Tommy—Course not; any duffer knows that. All you've got to do is to call in the cat and she'll lick it up; but this don't happen to be milk, an' mother'll do the licking.—American Boy.

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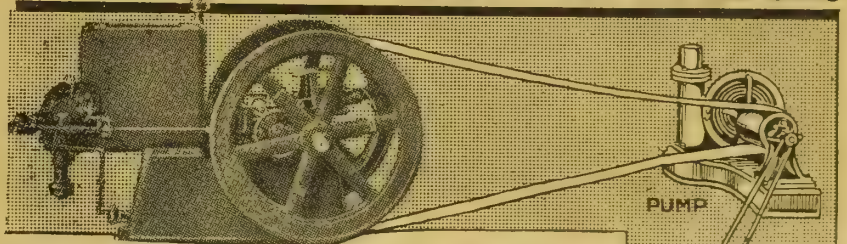
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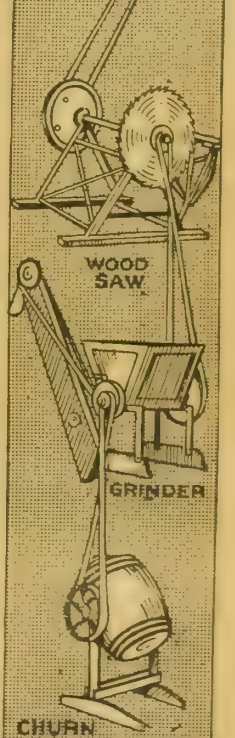
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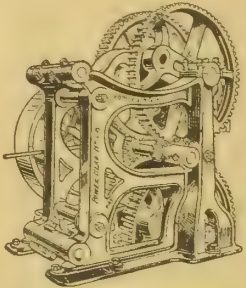


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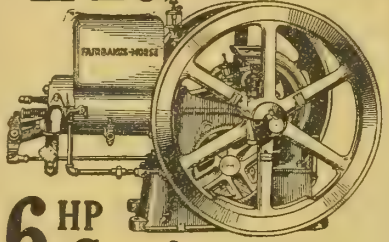
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VINE MILDEW IN 1915

By Frederic T. Bioletti



THE mildew, powdery mildew or Oidium of the vine, to mention its most common aliases, has been more prevalent and destructive this year than perhaps ever before in the interior valleys.

The agricultural college has made some experiments and observations during the present season that should be of interest to those vine growers who have suffered loss from this disease. While little or nothing useful can be done at the present season it is perhaps wise, while the damage is evident, to point out what seem the best methods of control.

The long accepted method of control is to dust the vines with sulphur during the growing season. Some growers state that they find this method useless or only partially effective. They instance cases where the vineyard has been sulphured five or six times without saving the crop from serious injury. An answer to this is that vineyards where the conditions are apparently identical have been saved completely by three sulphurings. They state further that serious injury has occurred in vineyards where 50, 100 and even 150 pounds of sulphur per acre have been used. In answer to this it can be shown that other similar vineyards have been protected perfectly by the use of 20, 15 and even 10 pounds of sulphur per acre.

If the facts are correctly stated on both sides they indicate that in some vineyards mildew is completely controlled by sulphuring at an expense of 50 cents to \$1.50 per acre and that in others, apparently similar, the expenditure of from \$2.00 to \$5.00 per acre for sulphuring does little good.

The cause of this difference in results appears to lie in differences in the time and method of applying the sulphur. In nearly all cases examined in which sulphur failed to control the disease the first sulphuring was done late in the season. In most cases examined in which sulphur was successful the first sulphuring was done early. In some cases the cause of failure appeared to be imperfect distribution of the sulphur. Sulphur of sufficiently good quality seemed to have been used in all cases.

The recommendations which it seems safe to make now with regard to sulphuring next year are:

Sulphur Early

This means when the foliage is sparse; when it is possible to see daylight through every part of the vine; when it is still possible for a bee to fly between any two leaves without touching them. This will be when the shoots are not over eight to ten inches long.

At this time a cloud of sulphur passing through the vine will leave a particle on every minute part of the surface. Later the older leaves will have grown so that many surfaces will touch. If the first sulphuring is deferred therefore many areas of surface will escape the sulphur and furnish places where the mildew can live

and produce spores to infect the new growth.

This first sulphuring should be done if possible in warm, dry, still weather. If such weather is not supplied by the weather bureaus, sulphur just the same. If the weather is very bad, re-sulphur in a week or ten days. These two sulphurings will together cost only half as much as a single sulphuring in July and be much more effective.

At or Before Blossoming

By this time the foliage will be dense in some parts; but these parts consist of the oldest leaves which have already been covered and protected by the first sulphuring.

When The Grapes Are as Large as Buckshot

In vineyards not usually much subject to mildew this sulphuring should be omitted. Later or more sulphuring will rarely be needed if these three are properly applied. For these late sulphurings it is usually best to wait until mildew appears.

Do Not Wait Until Mildew Appears

Do not wait till mildew appears for the first two or three sulphurings. Perfect control is possible only by preventive treatments. The idea in sulphuring should not be simply to kill the mildew; it should be to prevent its growth, multiplication and the production of spores. If we wait until mildew is found on the vines perfect control is impossible and even partial control is more difficult and expensive.

In the first two sulphurings do not miss a single leaf on a vine. This can be done with two to eight pounds of sulphur per acre, according to the size of the vine, if we use an efficient knapsack dust sprayer. With other means of distribution more will be necessary.

Use Only Finely Divided Sulphur

Coarse sulphur does not float in the air well, does not attach itself readily to the surface of the leaves and canes, and is easily shaken off by the wind or washed off by the rain. All the sulphur sent in by growers for examination this year was fair or good.

In short, to control the mildew of the vine, sulphur early, distribute the sulphur perfectly and use fine sulphur.

Comparative tests with other remedies showed that winter treatments are useless and other spring and summer treatments inferior to sulphuring. Some liquid sprays are recommended on the theory that they will control the mildew at the same time as the vine-hopper, the grape-root worm and similar pests. This is dangerous doctrine, as it leads to deferring treatment to so late in the season that control of the mildew has become impossible.

PACK CAREFULLY

California fruit growers and shippers have felt the necessity of reaching out to other countries to increase the marketing field. That they have done so to a considerable extent is evidenced by conditions at this time when many of the markets of the world are close, but many of us have yet to learn the lesson of packing. For instance, from a recent copy of re-

ports of the department of commerce we note the following written by the Consul General at Shanghai, China:

"I gave . . . of San Francisco, a large order last year and the packing



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was execrable. They shipped bottled jams and extracts as they might perhaps have done for Oakland, and when the stuff arrived here in fragments I could get no satisfaction out of them. Naturally I am not repeating the order.

"When I have been on furlough in America and manufacturers or wholesalers have asked me what openings there might be in China for their goods I have always replied bluntly: Not any, unless you are prepared to consider the requirements of the market and pack for long-distance transportation, as European dealers do.

"Last winter I placed two orders of the same value for rose plants, one with a nurseryman in Ohio and another in England. The American plants were simply tossed into a flimsy pasteboard box with a little loose moss, so that the box arrived all crushed and the roses as dry and dead as the bones of an early Christian martyr. The English roots were tightly wrapped in moss, then in cotton, and finally in a gunny bag. It took them longer to reach me, but all were alive."

The United States consul at Karachi, India, writes referring to the need of American packers having a series of moving pictures taken showing method of handling freight in foreign countries, especially in India. He refers to the severe handling given to cases of fruit, sacks of flour, etc. For instance "If single photographs of a smashed packing case, or a lighter full of goods being landed, or other illustrations are good, a picture showing how the case came to be smashed or how the goods were put into or taken out of the lighter would be better. Everyone knows that cases are smashed and a single photograph shows only the result, which any shipper can imagine.

"If, however, a shipper of flour, let us say, could see a lot of Levantine stevedores swing a loop full of sacks over the side of the ship and let it down on the run to a flatboat bobbing about in the waves, the sight of what happens when the boat rises suddenly to meet several hundred pounds of muslin-sacked flour would be an education to the shipper.

"If an American furniture merchant could see a moving picture of his packing cases dropped from a cart tail to a stone floor by a gang of Maltese dockers, he would appreciate the cause and effect."

"DRAWBACK"

According to the story told by Mr. Frank True of the Los Angeles chamber of commerce to visiting delegates of the American Pomological Society on their way to the Berkeley meeting, California has one very great drawback. He said: "Eastern people often come to California expecting to find a veritable paradise. In fact, I am not in a position to deny that it is, but the ideas of some people in regard to paradise are often greatly exaggerated and, finding some features of California farm life which are not up to the standard, they become discouraged or rather disgruntled and return to the good old states of snow and sleet. With the first return of the blizzards of January and the slush of February and March and the half year of general misery when nothing but a grouch will grow, memories of good old California mountains and valleys redolent of wild flowers the year around, and the song of the meadow lark, come to the former homeseecker and he longs again for California. Then he is drawn back to become a

resident, and this is California's greatest 'drawback.'" Hearty expressions by members of this delegation coming to attend the 34th Biennial Convention of the American Pomological Society leads us to believe that California's principal "drawback" may get in its work with them.

The party arrived at the Needles during the warmest weather our state has had for some years, but as they neared the shores of the Pacific the weather was greatly tempered and they enjoyed the entertainment tendered by the chambers of commerce of Redlands and Riverside and were captivated by the beauty of the San Diego exposition. The three days following, with Los Angeles as headquarters, under the direction of Secretary Frank Wiggins of the Los Angeles chamber of commerce, the delegates were shown intensive cultivation as followed by orchardists near Pasadena, along the Foothill Boulevard to Pomona, and at Whittier. At the San Dimas lemon packing house methods of packing California lemons were fully explained by Manager Hosford. At the packing house of the La Verne Orange Association at Lordsburg Manager Arbuthnot demonstrated methods of handling and packing oranges, showing how the fruit is carried by gravity to the pre-cooling rooms, thence by carriers to the pre-iced car which takes it to markets 3000 miles distant.

A delightful luncheon at the Maryland Hotel was given visiting delegates by the Pasadena board of trade. At the reception in the rooms of the Pomona chamber of commerce in the afternoon fruitade was served. Several plantations of avocados were shown at Whittier, the visitors afterward being entertained with a luncheon at the Country Club.

Arriving at Riverside the delegates were met at the train and were taken directly to the new citrus experiment station grounds, past the Roosevelt Palm and out Victoria Avenue where orchard methods of the Arlington Heights section were inspected. Dr. Herbert J. Webber, at the head of the experiment station, gave a most interesting outline of an experiment now under way in connection with a 25-year-old orchard which had ceased to be profitable. This is being handled by the experiment station with the idea of determining the possibility of restoring a run-down orchard. When taken in charge by the station staff practically every tree in the orchard was affected with chlorosis, the ground was of a putty-like consistency, almost devoid of humus, and the trees bore practically no fruit. A series of experiments contemplate treating different plats with green manures, with applications of stable manure, with ordinary grain straw, alfalfa hay, commercial fertilizers, and various combinations of treatments, including clean culture the year around and mulched land without any cultivation. Which one of these methods will prove the best to restore these lands? It will take years to answer this question. As yet the first year has not passed but already material improvement is noted in many of the plats. Of course some of the experiments may cost more than the increase in crop will justify, but the point is to thoroughly investigate every method which offers a solution of the problem of restoring unprofitable citrus orchards to profit producers.

As we go to press the delegates are in session in Berkeley. The officers

of the association are: President, L. A. Goodman, Kansas City; secretary, E. R. Lake, Washington, D. C.; treasurer, L. R. Taft, East Lansing, Michigan. Mr. Geo. C. Roeding of Fresno is vice president for California.

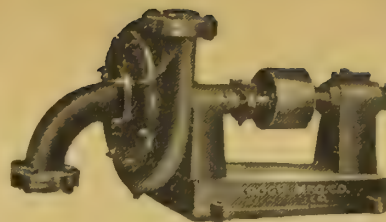
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Through a predominating insect diet, and on account of exceedingly rapid digestion, the birds become the most indispensable balancing force of nature; without their assistance man with his poisons, the weather, and animals, as well as the parasitic predacious insects, would be helpless. The author then states how the bird is a benefit to man in a great number of ways; in checking insect invasions, in preserving forests and orchards, their service in the meadows and gardens, their value in protecting live stock, and their usefulness in the preservation of health and elimination of disease.

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A Boston man, recently returned from Europe, complains that he was detained near Hamburg, Germany, for some time and had nothing to eat but sausages. Nothing to eat but sausages! That sounds very much like the kick of the man who has nothing to wear but clothes.—Philadelphia Inquirer.

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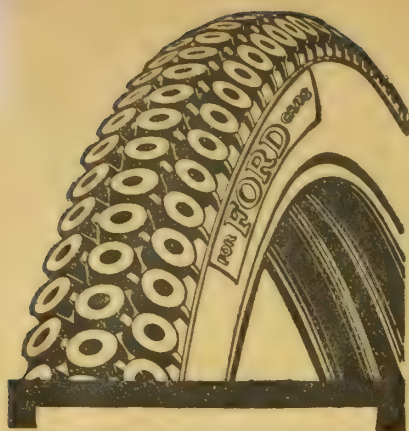
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THIS MONTH
Written for the California Cultivator
By O. M. Morris



ALL manner of gardening operations are in order this month, the first and most important step of all being thorough preparation of the ground, when we may proceed to plant all manner of hardy flowering plants for winter and early spring flowers. Bulbs for blooming at the holiday season should be put in. The Dutch bulbs will begin to arrive the latter part of the month but in the meantime we may plant Chinese lilies, freesias, daffodils and gladiolus. Hardy primulas may be sown under the shade of trees or on the shady side of the house. Especially satisfactory varieties of these are primula Malacoides and abconica. These have succeeded splendidly the past season, giving almost a constant mass of bloom for months. Make liberal plantings of winter flowering sweet peas at this time.

Among the hardy annuals and perennials for September planting are pansies, stocks, scabiosa, centaurea. The sooner these are planted the better. Cinneraria, calceolaria and plants of this class which have been potted off should be carefully watched and if the pots are becoming filled with roots they should be repotted without delay. Given the best of care for the next two months they should be ready to bloom for the holiday season.

This is the time to make selection of native flowers. Scatter freely in out of the way places, but if possible where hose may be used in case of drouth, at least some of the following:

Evening Primrose (Farewell to Spring) evening primrose family, deep rose-colored, sometimes with crimson blotches.

Godetia grandiflora, delicate pink, blotched with crimson.

Heuchera Hartwegii (Alum Root) saxifrage family, minute white flowers, handsome mottled leaves.

Layia platyglossa (Tidy-Tips) bright yellow, tipped with white, composite family.

Layia glandulosa, White Daisy.

Argemone platyceras (Thistle Poppy) white, poppy family.

Erigeron Coulteri (White Mountain Daisy) yellow and white, composite family.

Baeria (Sunshine) yellow, composite family.

Oenothera (Evening Primrose) yellow, evening primrose family.

Clarkia, rose pink, evening primrose family.

Penstemon Menziesii, pink.

Phacelia grandiflora (Baby Eyes) light blue to white, waterleaf family.

Phacelia Whitlavia (Wild Canterbury Bell) purple, waterleaf family.

Linaria Canadensis (Toad Flax) blue, figwort family.

Nemophila insignis (Baby Blue Eyes) azure blue, waterleaf family.

Collinsia bicolor (Innocence) lilac and rose purple, figwort family.

Salvia carduacea (Thistle Sage) lavender, white-fringed, mint family.

Platystemon Californicus (Cream-cups) cream, yellow spot at base, poppy family.

Violet pedunculata (California violet) yellow, violet family.

Floerkea Douglasii (Meadow Foam) yellow, sometimes tipped with white or rose-tinged, geranium family.

Emmenanthea penduliflora (Whispering Bells) straw-colored, waterleaf family.

Mimulus brevipes (Monkey Flower) yellow, figwort family.

Small Fruits

Vegetables

THIS MONTH

Written for California Cultivator
By O. M. Morris



THE planting calendar recommended for August may be followed this month with the possible exception of pole and lima beans. Since most of

the pole beans require a longer time to mature and are more susceptible to rust at this season than the bush varieties the latter are to be preferred. As for lima beans, excepting on hillsides in very favored localities these would not mature with any degree of satisfaction and even then they will not produce a profitable crop one year in five.

All the hardy vegetables, including beets, carrots, chard, endive, kohlrabi, kale, lettuce, onions, radish, spinach, turnips, cauliflower and cabbage may be planted. Nor is it too late to plant potatoes, though we would recommend planting old seed if it is possible to procure it.

In beans one may plant Canadian Wonder, Refugee, Early Valentine, Ventura and Black Wax. The earlier maturing or dwarf varieties of peas will be ready for the holiday season when vegetables are scarce and best prices are obtainable. Early maturing sweet corn will produce roasting ears in about seven to eight weeks. The best winter radish is the Japanese Mikado, which forms a root two inches in diameter and six to eight inches long. It is somewhat slow in maturing and should be thinned out in the row four to six inches apart to give opportunity for root development otherwise it will make heavy top growth without bulbing out. This is the mildest of all radishes and very productive.

Varieties of lettuce recommended for planting at this season are New York Wonderful and Iceberg. If a smooth-leaved variety is preferred we have the Big Boston, California Cream Butter and Bronze Top.

Best varieties of cabbage for the home garden are Copenhagen Market, or, still better, the Cannonball and Danish ballhead. The cannonball is the earliest cabbage grown, making a six to eight-pound head two weeks earlier than the Winningstadt, the small pointed head of which generally averages about three pounds so that on the same space one may grow eight-pound heads against three, and in less time, while the quality is unsurpassed.

Diplacus glutinosus (Sticky Monkey Flower) corn-colored to red, figwort family.

Mimulus Cardinalis (hardy perennial) scarlet, figwort family.

Leptosyne (Sea Dahlia) yellow, composite family.

Hypericum Concinnum (St. John's Wort) golden yellow, margin black-edged, St. John's wort family.

Mentzelia Laevicoulis (Blazing Star) cream-colored, blazing star family.

Delphinium Cardinale (Red Larkspur) orange, tipped with red, buttercup family.

Hunnemania (Tree Poppy) yellow, poppy family, and always, of course, Eschscholtzia, our state flower, the California poppy.

However the Copenhagen Market is a very fine cabbage about the same size as the Cannonball, with round head. It matures nearly one month later.

For early greens for the chickens or for the table we would suggest a liberal planting of Chinese Cabbage. This does not make a head in the sense of the American cabbage, being more of the nature of Swiss Chard, but it is the earliest to mature in the way of greens that we have, frequently making a head weighing ten pounds in from two to three months.

SALTPETRE FOR CABBAGE

An excellent poison for the troublesome cabbage worm, which usually makes the cabbage patch look quite ragged and unsightly, is an application of a liquid preparation, easily made.

Take a teaspoon of saltpetre and dissolve in about six quarts of warm water and allow to cool enough to prevent the heat from injuring the plants. Apply with a fine sprinkler or spray. It is surprising how hot water can be applied to cabbage without injury. Persons have been known to apply water that was hot enough to kill all worms and still the plant recovered and grew into a splendid head.

The saltpetre application is not only good to kill the worms but has a stimulating effect on the plant, inducing it to a more vigorous growth than those not so treated. It seems to reach the roots and give them a new life and the plants take on a new color and soon assume another appearance. It is thus doubly useful and is quite cheap. It is perfectly safe as far as any danger of poisoning the persons eating the cabbage is concerned.—Successful Farming.

It pays to grade strawberries. See that the boxes and the crates are uniform, even if a few boxes of poor fruit must be thrown away. The poor ones only reduce the value of the whole crate.

A mulching of well rotted manure is often put on canna beds about this time of the year. It keeps the weeds down and supplies plant food.

Cut out and burn the old raspberry canes as soon as they are through fruiting. Cultivate the young shoots and keep out all weeds.

Farm Bureaus



ANOTHER county of California has a farm adviser. Placer has just secured the services of Mr. E. O. Amundsen. His headquarters will be at Auburn in the offices of the county horticultural commissioner. We expect in a later issue to give announcement of farm bureau meetings in Placer County as arranged by Mr. Amundsen.

Napa County, H. J. Baade, Adviser, Napa

Browns Valley, August 1; Coombsville, August 2; Salvador, August 4; Rutherford with Dr. B. J. Cady, August 7; Calistoga with Dr. B. J. Cady, August 8; Fly District, August 9; Wood- en Valley, August 10; Soda Canyon, Directors' meeting at Napa, August 11; Carneros, August 13; St. Helena, August 15; Soscol, August 18; Rutherford, August 20; Berryessa, August 22; Pope Valley, August 24; Mt. George, August 25.

"Profitable Cattle Feeding" will be the subject discussed at these meetings and slides will be shown illustrating subject.

The Napa-Sonoma Cow-Testing Association directors at their meeting Wednesday morning, August 25, decided to commence testing September 15, as on that date more cows will be milking in the herds of this vicinity than during the first half of the coming month. After consideration of all applicants who have appeared before the directors, Mr. Hugh G. Asselstine of Humboldt County was chosen tester for the coming year. Mr. Asselstine is a graduate of the University Farm School at Davis where he completed the regular three-year course. He has had considerable practical dairy experience and recently engaged in official testing for the University of California. He has also carried on the herd testing at the University Farm, at Davis, and with the Panama-Pacific Dairy of Sutter Creek.

San Diego County, H. A. Weinland, Adviser, San Diego

Fallbrook and vicinity, September 1 and 2. Meeting, Fallbrook, 8 p. m., Wednesday, September 1.

Bonsall and vicinity, September 2 and 3. Meeting, Bonsall, 8 p. m., Friday, September 3.

San Diego, September 4. Meeting, directors county farm bureau.

Encinitas and vicinity, September 6 and 7. Meeting, Encinitas, 8 p. m., Monday, September 6.

Ramona and vicinity, September 8 and 9. Meeting, Ramona, 8 p. m., Wednesday, September 8.

Julian, September 10.

San Diego, September 11.

Dehesa and vicinity, September 13 and 14. Meeting, Dehesa, 8 p. m., Monday, September 13.

Poway and vicinity, September 15 and 16. Meeting, Poway, evening of Wednesday, September 15.

Jamacha, September 17. Meeting, Jamacha, Friday, September 17.

San Diego, September 18.

Spring Valley and vicinity, September 20 and 21. Meeting, Spring Valley, Monday, September 20.

Otay and vicinity, September 22 and 23. Meeting, Otay, Wednesday, September 22.

Mission Valley, September 24. Meeting, 8 p. m., Friday, September 24.

San Diego, September 25.

El Cajon and vicinity, September 27 and 28. Meeting, El Cajon, Monday, September 27.

Potrero and vicinity, September 29 and 30. Meeting, Potrero, Wednesday, September 29.

Kern County, R. R. Mack, Adviser, Bakersfield

Delano, Director R. H. Hiatt, September 1, 8 p. m.

McFarland, Director P. M. Peterson, September 3, 8 p. m.

Wasco, Director D. T. Fowler, September 7, 8 p. m.

Rosedale, Director John Waters, September 8, 8 p. m.

Rio Bravo, Director F. W. Haag, September 11, 8 p. m.

Panama, Director A. B. Robinson, September 13, 8 p. m.

Tehachapi, Director L. T. Jenkins, September 14, 8 p. m.

Muroc, Director C. E. Clark, September 15, 8 p. m.

Willow Springs, Director C. S. Millarr, September 16, 8 p. m.

Shafter, Director E. U. Combs, September 22, 8 p. m.

Arvin, Director Ralph Haven, September 24, 8 p. m.

Bakersfield, Director M. J. Adams, September 25, 2 p. m.

Maricopa County, Arizona, James A. Armstrong, Adviser, Phoenix

Prof. S. B. Johnson, who has been helping the lettuce growers here has succeeded in germinating lettuce seed

in the open field during the past week, by covering the seed with a thin layer of manure and the application of water. Mr. Johnson recommends that the rows be planted east and west and that a small ridge be thrown up on top and the seed planted as above on the north side of the ridge. The purpose of this special treatment being to germinate the seed sufficiently early to head the lettuce for the early market which is usually very good. Another point in favor of mulching is in the fertilizer which would stimulate the young plant.

Subsoiling of alfalfa can be done for less than \$3.00 per acre. Results are immediate and permanent. With rent for alfalfa land at \$12 to \$15 per acre per year it would not take many bare spots to have the whole field subsoiled.

Ventura County, William B. Parker, Adviser, Ventura

Ventura Avenue, September 3.

Fillmore, September 6.

Oxnard, September 8.

Camarillo, September 10.

Nordhoff, September 13.

Saticoy, September 15.

Moorepark, September 16.

Bardsdale, September 20.

Mound, September 21.

Simi-Santa Susana, September 22.

Somis, September 27.

Santa Paula, September 28.

Glenn County, W. H. Heileman, Adviser, Willows

Bayliss Farm Center, September 2

and 3; night meeting, Friday the 3rd.

Ord Farm Center, September 6 and 7; night meeting, Tuesday the 7th.

Larkin Farm Center, September 9 and 10; night meeting, Friday the 10th.

Codora Farm Center, September 13 and 14; night meeting, Tuesday the 14th.

Jacinto Farm Center, September 16 and 17; night meeting, Friday the 17th.

Orland Farm Center, September 20 and 21; night meeting, Tuesday the 21st.

The regular monthly meeting of the board of directors of the county farm bureau will be held at the farm adviser's office at 10 a. m., Saturday, September the 4th.

The Glenn County farm bureau has about completed its dairy stock and hog census preparatory to the formation of two livestock associations covering (Continued on Page 239)

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Long Handle Spades, per dozen...\$3.75 or 40c each
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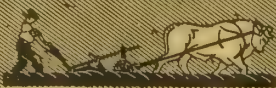
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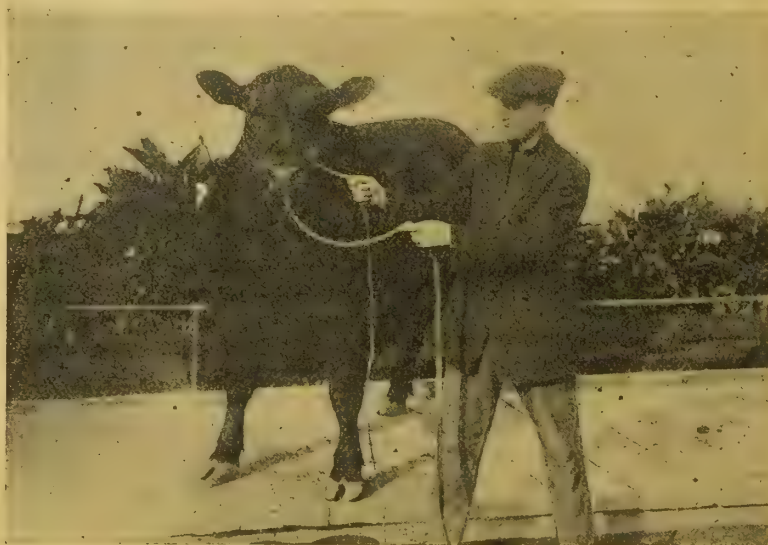


FARMERS' SHORT COURSES

T HERE will be four separate farmers' short courses at the University Farm, Davis, each beginning October 4, 1915. Three of these courses continue for six weeks, namely the course in general agriculture, the course in horticulture and the course in poultry husbandry. The course in

will be accompanied by practice work in common nursery methods, budding, grafting and top-working.

The third week will be largely devoted to the underlying principles of pests and their control. This will include studies of the types of insects and plant diseases which must be combated by the fruit grower and the methods used. Throughout the



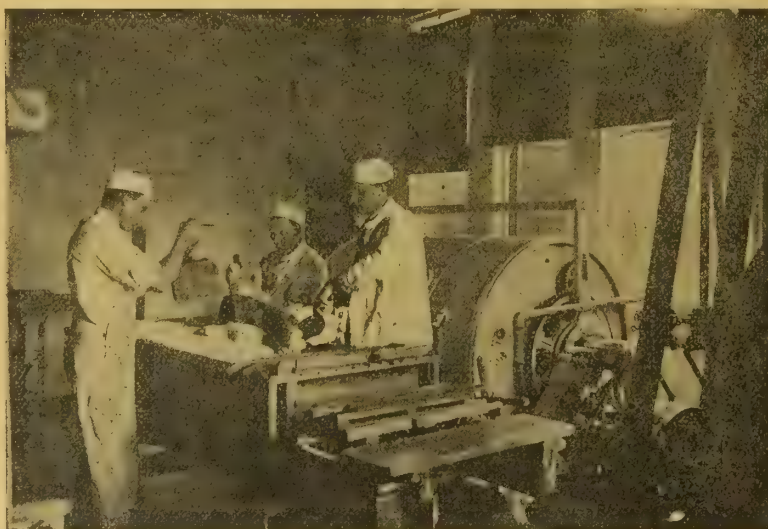
Fat and Pure Breds for Demonstration

dairy manufactures continues for eight weeks. Each of these courses is designed to meet the needs of ranchers, dairymen, poultrymen and fruit growers, who do not have the opportunity of attending the more extended instruction in agriculture offered by the university. There are hundreds of persons in California, who, however efficient they may already be, could profit by attending the lectures and practice offered in one of these courses.

The first three weeks of the course

course a portion of the time will be given to the studies of soils, irrigation, farm management and farm machinery—topics of fundamental importance in all branches of agriculture.

The work of the fourth, fifth, and sixth weeks of the horticultural course will be divided in such a way that the student may secure detailed instruction concerning the type of fruits in which he is most interested by attending one of the three subdivisions: Deciduous fruits, citrus and semitropical fruits,



Studying Principles and Practice of Buttermaking

in horticulture will be devoted to a consideration of topics fundamental to all branches of the subject. This work will include a thorough study of the fundamental principles of plant propagation and nursery methods, the pruning of fruit plants and the selection and preparation of lands for fruit plantations. Attention will be given to the basic features of successful marketing. This will involve studies in fruit handling, pre-cooling and storage, together with a consideration of the essentials of cooperation and marketing methods and agencies. This work

and viticulture. Similar detailed instruction is given in general agriculture, poultry husbandry and dairy manufacturers.

From letters of criticism and of commendation for these short courses we quote:

"After I returned home and told the neighbors some of the things I learned they expressed a desire to attend if they could only get off. Six of my neighbors are feeding their calves a grain ration I learned.*** They are all profiting by it. I am feeding a bull calf a grain ration I learned

at the farm and at five months he weighed 394 pounds. *** I hope to be able to attend the dairy manufacturing course this year."

"Intending to settle in the country but having no experience whatever, we realized that many of the failures we heard about were due to lack of knowledge, so we wanted to learn something about what we were going to do before starting in. The six weeks' course in poultry husbandry and other subjects was very interesting and beneficial. We take every opportunity to recommend it but we are really surprised that so few know anything about it."

"It seems to me that each grange of this state should establish a kind of scholarship that would enable one of its younger members to attend a short course each fall. Even if half the expenses were borne by the organization, it would be a big inducement for some person to attend."

"I would suggest that you make the dairy course longer, as it really is too short a time to learn what we are supposed to in eight weeks. The course is fine for people that already were engaged in the dairy business before coming to Davis. I would not have missed the course I took for anything."

"Being city bred, I would suggest that you make the benefits of the short courses known to all who contemplate giving up a position to go to work on a farm. Professor Adams in his farm management lectures soon reduces "Country Gentlemen" dreams to hard work and no pay, unless you are above the average. I am very enthusiastic over the good I received in the short course."

FRESNO FAIR

Bigger premiums than ever before are announced for the Fresno District Fair to be held September 23-25.

Aside from a great number of special amusement features will be the staging of an outdoor play and pageant which the directors are prepared to spend \$15,000.00 to perfect. Following is the revised list of premiums in the different classes which will be offered this year: Divisions A and B, Horses, \$3,346.00; Division C, Cattle, \$3,170.00; Division D, Swine, \$870.00; Division E, Sheep, \$450.00; Division F, Poultry (if all classes fill), \$5,538.00; Division G, Apiary, \$110.50; Division H, Dairy \$516.00; Division I, Agriculture, \$450.00; Division J, Horticulture, \$924.00; Division K, Floriculture, \$675.00; Division L, Woman's department, \$860.75; Division M, Fine Arts, \$400.00; Division N, Educational, \$186.50; Division O, Oils and Minerals, \$150.00; Division P, Machinery and Vehicles, silver cup and diplomas; Division Q, Mercantile displays, silver cup and diplomas; Division R, Viticultural, silver cup and diplomas; Division S, Automobiles, silver cup and diplomas; Division T, better baby contest, silver cup and diplomas.

ARIZONA STATE FAIR

The Arizona State Fair, to be held at Phoenix, November 15 to 20, will be as big as ever. Directors have been appointed to the different departments which now number 23. The purses and prizes will total about \$80,000. This amount includes the prizes for the track events, auto races and all the other features of the Fair.

The office of the Arizona Fair is at Phoenix and the secretary is Mr. T. Shaughnessy.

COMING FAIRS
CALIFORNIA

No state fair will be held this year on account of the Panama Exposition.

Esparto Almond Festival, Esparto, Yolo County, Sept. 4.

Arbuckle Almond Festival, Arbuckle, Colusa County, Sept. 6.

St. Helena Vintage Festival and Napa County Farm Bureau Fair, St. Helena, Sept. 3-6.

Rio Vista Horse Show, Rio Vista, Sept. 9.

Merced District Fair, Sept. 23-25.

Fresno District Fair, Sept. 28-Oct. 2.

Riverside District Fair, Oct. 5-9.

Orange County Fair, Santa Ana, Oct. 12-16.

National Orange Show, San Bernardino, Feb. 17-24, 1916.

ARIZONA

State Fair, Phoenix, Nov. 15-20.

COLORADO

State Fair, Pueblo, Sept. 13-18.

Morgan County Fair, Ft. Morgan Aug. 31-Sept. 3.

Larimer County Fair, Loveland, Aug. 31-Sept. 3.

Crowley County Fair, Sugar City, Sept. 8-10.

Cheyenne County Fair, Cheyenne Wells, Sept. 8-11.

Logan County Fair, Sterling, Sept. 7-10.

St. Vrain Valley Fair, Longmont, Sept. 7-10.

Lincoln County Fair, Hugo, Sept. 15-18.

Conejos County Fair, Manassa, Sept. 16-18.

Routt County Fair, Hayden, Sept. 15-17.

Farmers and Stockgrowers' Fair, Burlington, Sept. 22-25.

Montezuma County Fair, Cortez, Sept. 21-24.

Las Animas County Fair, Trinidad, Sept. 21-24.

Soil Products Exposition, Denver, Sept. 27-Oct. 9.

El Paso County Fair, Calhan, Sept. 29-Oct. 2.

Colorado Agricultural Fair, Overland Park, Denver, Oct. 2-9.

Dry Farming Congress, Denver, Oct. 30-Nov. 10.

IDAHO

State Fair, Caldwell, Sept. 27-Oct. 1.

Northwest Livestock Show, Lewiston, Nov. 29-Dec. 4.

MONTANA

State Fair, Helena, Sept. 20-25.

OREGON

State Fair, Salem, Sept. 27-Oct. 2.

Multnomah County Fair, Gresham, Sept. 14-19.

Clackamas County Fair, Canby, Sept. 20-23.

Pacific International Live Stock Show, Portland, Dec. 6-11.

UTAH

State Fair, Salt Lake City, Sept. 26-Oct. 3.

National Wool Growers' Association, Salt Lake City, Sept. 6-7.

WASHINGTON

State Fair, North Yakima, Sept. 20-25.

Columbia River Interstate Fair, Vancouver, Sept. 6-11.

Interstate Fair, Spokane, Sept. 13-18.

Walla Walla Fair, Walla Walla, Sept. 13-18.

Columbia River Carnival, Kennewick, Sept. 12-14.

Corn and Hog Show, Prosser, Oct. 22-24.

Stevens County Live Stock Show, Oct. 27-30.

Western National Dairy Show, Seattle, Nov. 8-13.

Cascade International Stock Show, North Yakima, Nov. 22-27.

WYOMING

State Fair, Douglas, Sept. 26-Oct. 2.

RIO VISTA HORSE SHOW

Rio Vista and the local center of the Solano County farm bureau with County Farm Adviser J. W. Mills, are planning for a gala day at Rio Vista on September 9.

A detailed program has not yet reached us but there will be a parade in the morning and horse and colt show. Prizes are to be awarded for the best horse and colt in each class, the nature of the prizes to be announced later. In the afternoon there will be a water carnival, boat races, swimming races, tub and barrel races and other events of a similar nature. There will also be a band concert. In the evening a grand ball, under the auspices of the Woman's Improvement Club, will crown the day's festivities. During the progress of the ball there will probably take place a water pageant.

Members of the central committee are: Dr. A. J. McKinnon, John McCormick, E. W. Westgate, A. Harvie, Geo. Sanford, A. R. Grinstead.

VINTAGE FESTIVAL AND NAPA COUNTY FARM BUREAU FAIR

St. Helena will hold her fourth vintage festival, September 3-6.

The Napa County farm bureau has decided to join in the celebration this year, making it a four-day event. It is reported that six carloads of poultry

and stock will be exhibited. The locals of the farm bureau will also make exhibits. Professors Crocheron, True, Bioletti, Clark, Shaw and Mead of the state university will be present to speak to the members of the farm bureau.

A big stock parade will be the feature of Saturday. It will be staged at 10 o'clock in the morning. There will also be a floral and industrial parade, allegorical dances, and many amusement features.

RIVERSIDE DISTRICT FAIR

The third annual fair of the Riverside District Fair Association will be held October 5-9. Premium lists are now being mailed and premiums are liberal enough to induce a good showing of all kinds of farm products, including live stock. The superintendent of the live stock exhibits is F. W. Stalder, one of the largest live stock breeders of the southern end of the state. Automobile exhibits will be especially strong. Of course special attention will be given to music and feature entertainments, but primarily it is an agricultural fair.

The officers of the association are: J. F. Backstrand, president; O. P. Sanders, secretary, and J. E. McGregor, manager.

The first arrest made under the new fruit standardization law was of a table grape packer at Dinuba.

DYNAMITE WARNING

With the farmers of this country using about 25,000,000 pounds of dynamite annually there is opportunity for serious accidents, especially in consideration of the fact that some unwise instruction has been passed on to them. We have a letter from an expert in the handling of explosives in farm operations and he refers to some of this so-called information and to the danger of following it.

For instance in a recent article in a farm paper the writer said: "To attach the fuse, place one end in the cap and force it down to the primer." The word "force" has no business anywhere near the word "cap," except in a warning not to use it. Caps are filled with fulminate of mercury which is far more sensitive than dynamite, and it is not only dangerous to force fuse into the cap, but entirely unnecessary because the fuse is always smaller in diameter than the inside of the cap.

The same writer says: "After the cap is set crimp it near the top." Which is the top? If the farmer who follows these directions guesses wrongly, he will lose his hand.

He also writes: "Do not go back to inspect the work thinking the fuse has gone out until at least 20 minutes have expired." We recommend a half day instead of 20 minutes. When a fuse fails to fire a charge in a minute or two, the chances are the powder train is broken. This means that the cotton of the fuse is on fire and the spark is slowly traveling to the point where the powder train is again taken up. It may do this in one minute or one hour. Many of the accidents in using dynamite have resulted from inspection of presumed misfires.



ORCHARDISTS find sand cultivation difficult. Until a recent date no suitable tractor had been placed on the market that met this peculiar condition. **THE YUBA BALL TREAD TRACTOR** has met and successfully overcome this difficulty. Its distinctive features have made this possible.

The Ball Tread does not sink in the sand. The balls are large enough to crush any particles of sand that enter the ball race. The compactness of the machine permits it to run under the fruit-burdened branches without injuring them.

The unique transmission allows the machine to get close to the trees and

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Grapes Alfalfa

Grain Hops Hay

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Agriculture

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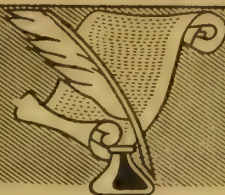
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geles, California, as Second-Class Matter.**Thursday, Sept. 2, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling dif-
ferences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**HOT WEATHER**The state has been given a
taste of good old summer time and
some little damage has been done.
However, the walnut districts which
feared the most from the heat report
that on the average there will be less
than one per cent of injury to the crop.
The hot September day of 1913 caused
damage in various sections of from 15
to 40 per cent, so that it may be seen
that this year's injury will be exceed-
ingly light.**SOIL PRODUCTS**The International Soil Products
Exposition will be held in Denver,
September 26 to October 10, in con-
nection with the International Dry
Farming Congress. Secretary R. H.
Faxon of Denver writes that governors
of nearly all the western states have
written of their intention of being
present. The Dry Farming Congress
has been a material factor in the up-
building of the semiarid West. It has
had to do largely with the legislative
side of the dry farming interests, but
the exposition has so much to do with
the productive end that all classes
interested in the upbuilding of the
West should be and doubtless will be
so far as possible present at this ex-
position.**GIVE US DATES**It is one of the missions of the
Cultivator to pass on information as
to agricultural fairs and other events
of interest to our people. Very often
we receive communications giving in-
formation as to character of the fair
or event or even touching at some
length on vaudeville stunts of various
kinds which are to be features of the
fair, but neglecting to give the allimportant detail of the date. Hence
the item is of but little value from a
news standpoint. When a special fes-
tival day or fair is to advertised we
think one of the principal efforts
should be to burn that particular day
into the minds of all the people of the
state as being devoted especially to
that one event, but we believe half
of our informers neglect this impor-
tant feature.**COOPERATING COOPERATORS**Sheridan W. Baker, a director of
the Santa Rose Cured Fruit Associa-
tion, is another cooperator who plans
for a larger and more general co-
operative movement, one which will
enable the various cooperating organ-
izations to affiliate with other similar
organizations in the distribution of our
products. Too often the products of
one farm come into competition direct-
ly with the products of a neighboring
farm and both bring low prices. This
is true especially when goods are sent
to the market and turned over to the
commission man who uses the crops
of one neighbor to batter down the
prices paid to another.Mr. Baker writes that he would like
to see representatives of California's
various cooperating organizations
meet in Visalia at the time of the
State Fruit Growers' Convention and
discuss this matter.We have a still better suggestion
for Mr. Baker and others who believe
in this same general cooperative
movement. Why not encourage organ-
ization of a general state federation
of all agricultural organizations? Such
a movement was launched nearly 12
months ago and a committee met at
the recent State Fruit Growers' Con-
vention at Palo Alto and decided to
call at an early date, possibly in Octo-
ber, a general meeting of representa-
tives of all agricultural organizations
in California. There is certainly an
increasing demand for this inclusive
organization.**NATIONAL DEFENSE**In his "Our National Defense,
The Patriotism of Peace," Mr. George
H. Maxwell says that we have in this
country militarists, passivists, pacifi-
cists, pacificators and finally, women's
peace party. Between the two ex-
tremes of militarists and passivists
who wish peace at any price, the oth-
ers are placed. Mr. Maxwell places
himself in another class, and he surely
has presented in his remarkable book
peace plans which are worth consider-
ing by the American people. We wish
this book could be read by every
American. It has somewhat of a pes-
simistic tone and through it runs a
word of warning to the nation to pre-
pare "against" war. After discussing
the methods preferred by these classes
from militarists to passivists, he as-
serts that the Frankenstein of war can
be controlled by "organizing a system
of national defense against Nature's
destroying forces, which can, by touch-
ing a button, be instantly transformed,
if need be, into a force for national
defense against a foreign invasion or
to uphold the rights or honor of the
nation.""Has it occurred to you that, unless
we wake up, mend our ways and
change our national policy, war is ulti-
mately as inevitable between the
United States and Japan as it has been
for years between France and Ger-
many."However, the author appeals for "no
militarism" or control by a militaryparty, for while "Japan with infinitely
less resources has a military system
more than 40 times more powerful
than this republic," there are other
methods of defense which mean build-
ing up in time of peace. Methods
which have made Germany strong
and which obtain in Switzerland and
Australia are referred to, then a modi-
fication is suggested by the author.In a word his plan calls for the using
of this land by the people of America
who are today hungry instead of the
large land holders leasing it to Asiatics
or even Europeans who are not intend-
ing to become an integral part of our
nation.To fit these lands for occupancy let
there be enlistment of an army of
peace, working under civil control in
time of peace to safeguard against the
invasion of nature's devastating forces.The German system of forests and
waterways would, under this plan, be
adopted in the United States and ex-
tend to the building of all public
works necessary to regulate and stand-
ardize the flow of rivers, prevent and
protect against floods, conquer the
deserts and reclaim the swamps, in-
cluding a great national system of
highways. The men doing this work
would be enlisted as reservists, as are
the foresters of Germany, France and
Russia. They would be given substan-
tially the same military training that is
given to the foresters of Germany or
to the reservists of Switzerland and
Australia. Switzerland has a re-
serve of 500,000, Australia of 600,000.
Instead of spending millions, even
hundreds of millions, on a vast stand-
ing army maintained in partial idleness
a vast constructive force would
increase our national wealth and, of
far more importance, give opportunity
to the homemaker to secure a living.If America does not see fit to save
these lands for her own people "the
Japanese nation which has a total of
arable lands less than that of Califor-
nia's one central valley, and is in-
creasing with such rapidity that
swarming is becoming a necessity, will
some day take them for her own use."We feel, however, that Mr. Maxwell
is somewhat over enthusiastic as to
the productiveness of American acres.
He thinks that the Sacramento Valley
and some of the rich lands of the for-
mer Colorado desert are capable of
supporting a family on each acre and
in addition enabling them to put aside
a comfortable nest egg each year. At
least he says that the Japanese, the
Belgians or the French could make a
living on these lands and Americans
should be educated to it. They never
will be. The intensive methods and
the knowledge required can never be
brought to the point of forcing an
American living from only one acre or
soil. Possibly for one year, and may
be longer, under favorable circum-
stances, in isolated cases, it might be.
But as to averages and good and bad
years, it can be only in a dream. But
if it were possible then the author
contends that on that basis the one
great central valley of California could
support 12,500,000 families and with
the idea that the head of every one of
these families should be a defender of
the nation.Some of the author's ideas will be
startling to many but we would sug-
gest to our readers that they get Mr.
Maxwell's book and read it. It will
cause some serious thinking, especially
in view of the fact that Great Britain
is showing to the world today some of
the weak spots in her system of car-
ing for her common people. Besides
with national integrity lightly consid-
ered and treaties becoming scraps of
paper it is the worst of folly for the
richest of all nations to be unpro-
tected.**Agricultural Notes**A congress of all farmers in the
Philippine Islands met at Manila the
latter part of August.Chicago cold storage houses are so
filled with eggs that apple growers are
puzzled to find a place to store their
fruit.The honey crop of Texas is unusu-
ally short this year, some sections re-
porting only one-fifth to one-seventh
of a normal flow.Estimates of Florida's citrus crop
for this fall indicate that grapefruit
will be 25 per cent short and oranges
10 to 15 per cent short.Of the 3520 cheese factories in the
United States federal officials credit
Wisconsin with 1720 or nearly one-
half of the entire number. New York
ranks second with a few less than a
thousand.The rice acreages of all the south-
ern rice growing states have increased
this year. For all rice producing
states in the Union the total estimated
acreage for 1915 is 801,139, compared
with 689,908 last year.Wisconsin has more silos than any
other state in the Union. It is esti-
mated that in January, 1914, there
were 41,500 silos in the Badger state,
or more than two and a half times as
many as Illinois, its closest rival.Exports from the United States to
South America in March, April, May
and June show an increase of 34 per
cent over those of the corresponding
months of last year, amounting to
\$45,000,000, against about \$35,000,000
in the same period of last year.New Zealand will have a large ex-
hibit of prize sheep at the Panama-
Pacific Exposition. The following
breeds will be on exhibition: Romney
Marsh, Corriedale, Lincoln, Border Lei-
cester, English Leicester and Down.
Last year New Zealand raised 25,000,
000 sheep and exported about 7,000,000
dressed.The mileage of concrete pavements
in the United States has increased
rapidly, and it is likely to continue
to increase, according to a new bulle-
tin of the United States department
of agriculture. This bulletin gives the
estimated amount of concrete pave-
ment in the United States in 1914 as
19,200,000 square yards; in 1909 it
was only 364,000 square yards.Contrary to the prevailing belief
that this year's output of beet sugar in
Belgium would be negligible, a corre-
spondent of the London Times reports
that nearly all of the Belgian factories
are at work, including those at Wanze
and Huy, between Liege and Namur,
and at Tirlemont. The manufactur-
ers, says this correspondent, have no
expectation of making any profits, but
they are doing a great work in that
they are saving \$6,000,000 worth of
beets and are providing employment
and a livelihood for their hands.The area of the Chugach National
Forest, Alaska, which is to be crossed
by the railroad that the government is
building from Seward to Fairbanks, is
reduced nearly one-half by a proclama-
tion, signed by President Wilson, re-
turning approximately 5,802,000 acres
to the public domain. This action fol-
lows classification of the land by the
forest service showing that the areas
involved are not of high enough tim-
ber value to warrant government pro-
tection, and means the largest elimina-
tion of national forest land ever made
by a single presidential proclamation.
Not much of the land eliminated is
valuable agriculturally.

Agricultural News Notes



of the Pacific Coast

Northern California

A number of sales of hops have been made at Ukiah, Mendocino County, at 12½ cents.

The purchase was made last week of practically all the long wool in the Cloverdale district at a price of 27½ cents.

A special stock train made a record run from Chico to San Francisco on August 12. The trip was made in 12 hours.

The suggestion is being made that the Sacramento Valley exhibit at the San Diego exposition be permanently located at Los Angeles.

Hop growers of Wheatland, Yuba County, estimate their crops will be heavy this season. The prospect for better prices is also good.

State Veterinarian Keane is protesting against sale of horses to be used in the European wars. He says that we need the stock at home.

Many peach growers in the district about Marysville have been feeding their peaches to the hogs because of lack of satisfactory market.

Five hundred and twenty-three acres of land, formerly the Crain ranch near Oroville, Butte County, has been sold to a company which will plant it to rice.

A movement is reported to have been started among fruit growers to make the provisions of the new standardization law apply also to fruit shipped to market within the state.

Arbuckle, Colusa County, will observe September 6 as Almond Day. There will be exhibits of almonds, for which cash prizes are offered. There will also be an almond hulling contest.

Wool growers of northern Sonoma and southern Mendocino Counties met in Cloverdale Tuesday, August 24 with State Veterinarian Keane to determine methods of eradicating sheep scabies.

B. B. Meek of Oroville, after a trip through olive growing sections of the state, makes the statement that any over-stock of olives now on hand is of the small green fruit, that large sizes of good fruit are all sold out.

The boys of the Woodland high school agricultural club are bringing to a close the year's pig club contest. Subscriptions are being received to send the winner with 40 other club winners of the state on a continental trip to study agriculture.

A test will be made of the constitutionality of the recently enacted law prohibiting sale of imported eggs unless plainly labeled. Dealers claim that much stock on hand is spoiling in the warehouses because bakers are loath to buy goods labeled "Chinese."

Oroville orange growers are protesting against the so-called eight-to-one test for determining the maturity of oranges. They claim that the fruit in their district carries a larger percentage of juice than fruit grown elsewhere, and that therefore the poorer oranges containing less juice often pass the test satisfactorily where the good oranges are thrown out.

Central California

The cooperative poultry association of Tulare County shows business transacted for July totaling \$4,372.

Work has begun in the fumigation campaign against the red scale in the Porterville district of Tulare County.

Two hundred tons of Reedley raisins have been ordered for shipment to England through the Associated.

The interstate commerce commission has been requested to allow shipment of green grapes east in uncovered lug boxes.

The almond orchards of Merced are suffering from the pest of red spider. Orchardists are fighting it with liquid sulphur sprays.

The beet slicing campaign began at the Spreckels factory Monday, August 30. The campaign will probably last until the first of December.

The Madera County farm bureau has organized a Swine Breeders' Association whose main object is the prevention of hog cholera.

Sweet potatoes are being shipped from Atwater, Merced County, and are bringing a price to the growers of \$2.50 per hundredweight.

The Associated Raisin Company has issued an appeal to all growers not to pick grapes for raisins until they carry sufficient sugar to make best grade raisins.

Seventy-five cents has been fixed as the minimum price for standard and fancy Bellflowers by the executive board of the Watsonville Apple Distributors.

Peach cutters in the Dinuba packing houses are receiving three and one-half to five cents per box this year. Field laborers receive two dollars a day.

One thousand seven hundred and seventy-five head of cattle from the Poso Ranch in Kern County were purchased last week for \$135,000 for shipment to Europe.

The Tulare County Citrus Association will this season market through the exchange. The association plans to erect packing houses at Cutler, Orosi and Orange Cove.

Harvesting of the almond crop is well started in the Oakdale section of Stanislaus County. The crop is about two weeks ahead of last season and more than double in quantity.

Report of the engineer appointed to look over the proposed Lindsay-Strathmore irrigation district will be heard by the supervisors on September 10. The new district would bring over 100,000 acres of land under irrigation.

A mass meeting of peach growers was held at Fresno the last Saturday in August to form a California peach growers' association, modeled on the same plan as the California Associated Raisin Company. It is to be capitalized at \$100,000.

According to O. P. Brownlow, game warden of the Porterville district, property owners whose crops are being damaged by cottontails may kill them now despite the fact the season is closed. The season will open again to everyone on October 15.

Southern California

Lima bean growers of Orange County are refusing offers of four and one-half cents.

The Whittier Citrus Association is trying out the new cyanofumer in its fumigation operations.

Many hundred acres of beans are now being harvested in the Beaumont section of Riverside County.

There are 3000 acres of walnut trees in full bearing in the El Monte district of Los Angeles County.

Citrus growers of Rialto recently held a meeting with County Horticultural Commissioner Coy and decided to fumigate all groves.

For the year ending August 31 citrus growers of Orange County received returns aggregating \$3,760,000. About one-fifth of this is for lemons.

Supervisors of Imperial County have been notified that unless they appoint a county sealer of weights and measures the appointment will be made by the state.

Great preparations are being made for the Riverside district fair to be held at Riverside October 5-9. The new Women's Exhibit Palace has just been completed.

Fifteen horses valued at more than \$100,000 were recently shipped in a special car to the San Francisco exposition from the Santa Anita Rancho in Los Angeles County.

One feature of the Ventura County fair exhibits was a special exhibit from Ahacapa Island which is included within the county. The exhibit was of fish, seals and sea mosses.

It is reported that the extension department of the state university will soon establish a model farm at San Luis Obispo, to be conducted by the state polytechnic school.

A large number of Covina ranchers attended the sessions of the fumigating school at Pomona, recently held under direction of C. W. Woodworth of the state university.

Preparations are being made in the Paso Robles section of San Luis Obispo County for the almond harvest. Hundreds of acres of young trees came into bearing this year for the first time.

The El Monte Walnut Growers' Association has awarded contracts for the erection of a walnut packing house. This association affiliates with the California Walnut Growers' Association.

The Bean Growers' Association of Garden Grove has been organized with M. A. Mathews, president, and Edward Chaffee, secretary. Plans are being drawn for the erection of a new warehouse adjoining the walnut packing house.

Lima bean growers of Orange County propose to form a county exchange to secure reliable information regarding crop and marketing conditions. Associations have already been formed at Garden Grove, Smelter and Wintersburg and on the San Joaquin Ranch. These Associations will join in a central exchange.

The Coast

Idaho is sending a big exhibit to the Spokane Interstate Fair, which opens September 13.

Tekoa, Washington, reports many harvest fires, several of them caused by smut explosions.

It is said that 200,000 homesteaders have filed on land in New Mexico during the past ten years.

A poultry show will be a big feature of Spokane's Interstate Fair to be held September 13-18.

There will be an Indian agricultural fair September 8, 9 and 10 on the Spokane Indian reservation near Lincoln, Washington.

Sixty thousand sheep and 10,000 horses and cattle were grazed last year in the Umatilla National Forest of Oregon.

The executive committee of the Northwestern Grain Dealers Association held its annual meeting at Helena, Montana, August 21.

Beavers are destroying orchard trees at Freewater, Oregon, and the state game warden has been asked for a special permit to destroy the beavers.

The fifth annual Columbia River Valley Grape Carnival will be held at Kennewick, Washington, September 13-15. About \$1,000 cash will be given in prizes.

Special prizes have been offered for Shire horses exhibited at the Oregon state fair September 27-October 2. Prizes are offered by the Shire Horse Society of Great Britain and Ireland.

Local bankers of Washington are cooperating with the extension service of the state college in having moving pictures taken of farm operations to be used as an educative feature.

Yellow jackets are so numerous in the mountains near Pomeroy, Washington, that cattle refuse to go to watering places often enough to keep in good condition. All the springs and moist grounds are alive with the pests.

At a meeting held in Marcus, Washington, last Saturday, steps were taken to organize the Upper Columbia Live Stock Association and to arrange for a stock sale to take place at Marcus some time in October.

"A pig for every boy and girl in Spokane County" is the slogan of the Spokane County Pomona grange, which last week instituted a pig raising campaign in which it will endeavor to enroll as many boys and girls as possible.

A preliminary organization has been effected of live stock men of the upper Columbia. Permanent organization will take place at a meeting to be held in Marcus, Washington, October 4 and 5, at which time there will also be held a big stock sale.

An outbreak of hog cholera is reported at Idaho Falls, Idaho. State Veterinarian Bodie reports that more hog cholera serum is being used by swine raisers of the state than ever before and that the disease is less prevalent than in former years.

There is a Difference between the Ideal Green Feed Silo and Other Silos



IT DOESN'T TAKE AN EXPERT to tell the difference between an Ideal Green Feed Silo and some others.

ON THE CONTRARY, it is an easy matter if the prospective purchaser will remember that a silo to be of any value whatever must be "air and water-tight" and capable of producing good ensilage from every pound of good feed put into it.

IF HE WILL THEN TAKE FIVE MINUTES to compare:

The detail of construction,
The quality of material and workmanship,
The contact of the doors with the door frame,
The kind and size of hoops and lugs used,
The quality of the paint for the inside.
The type of roof and whether or not it is fitted with a galvanized ventilator.

What provision, if any, is made for keeping the silo round and preventing its collapsing,

In fact, everything that enters into the design and construction of a silo that will make it a thoroughly practical piece of equipment,
He will then see the difference.

THE MAN WHO TAKES even the first step indicated in seeing for himself the difference between the Ideal Green Feed Silo and others does not put his money into any other, one time in a thousand.

THE COMPARATIVELY FEW BUYERS of other silos are those who merely read printed claims, or listen to the argument of some self-styled "adviser" who is probably working for a commission only and whose sole purpose is primarily to sell a bill of lumber.

THE WISE BUYER OF A SILO today does see the difference when buying his first silo while the unwise or careless one usually finds that his presumed saving in first cost actually means a loss to him in spoiled feed and represents the difference between success and failure in the use of a silo.

OUR PURPOSE in selling a silo is to develop the dairy and stock raising industry on a more substantial basis than heretofore, and in order to do this we must supply a silo that is a thoroughly practical piece of equipment.

THAT IS THE REASON WHY four buyers out of five are buying Ideal Green Feed Silos and why the use of the Ideal Green Feed Silo will, before long, be as nearly universal on the Pacific Coast ranch as it is in the Eastern States and Canada.

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"Cushion" Collars.....each 3.00

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The "Felt-face" collar is all-leather, first-quality of oak-tannage, hand-thonged throughout. It has a facing of felt under the leather face, producing a soft yet firm surface against which the animal pulls.

It is natural for any manufacturer to say that his collars are "the best," but it is only about "FELT-FACE" collars that letters like this are written:

W. DAVIS & SONS, San Francisco.

Gentlemen:—I sold the Red Bands Orchard Co. two Felt-face collars about a month ago for two sore-neck mules which are all healed up now. They came in today and ordered one dozen. Please send me soon as possible 1½ dozen, from 17 to 22-inch.

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Live Stock and Dairy



SACRAMENTO VALLEY DAIRY PROGRESS

Written for California Cultivator

By W. S. Guilford



GOOD many milking machines are being sold to Sacramento Valley dairymen and they are giving splendid satisfaction, and thousands of cream separators have been distributed over this section.

There is a steady increase in the number of cows being milked. Mature animals are being brought in from other districts and the natural increase is furnishing many. The man that has a heifer calf that he does not want to raise does not often have to look farther than his neighbor for a buyer, and few if any females are killed for veal.

There is no big cow selling movement that could be called a boom, but high prices for cows are maintained and there is strong competition for the cream. Almost every district has one or more butter or cheese factories and others within a radius of 150 miles or more are eager buyers.

The growth of the dairy business in some parts of the valley is causing increased planting of alfalfa; in others the increase in the alfalfa acreage was the reason for the start and growth of the dairy industry. And everywhere that cows are milked there is sure to come an increase in the number of silos.

With the abundance of alfalfa, corn and barley that can be grown in the Sacramento Valley, the production of dairy products per square mile of good soil must some day be such as to place this in the front rank among the dairy districts of the world.

Sacramento Valley dairymen are as a class very progressive and many of them are gradually working into the growing of pure bred animals. The demand for registered bulls has been good and cows of demonstrated producing ability sell at a good premium. A heavily milking cow will bring \$150 from many dairymen much more quickly than an indifferent animal will bring \$75. This is as it should be—but not as it is with many buyers.

Weeding out of undesirable animals, "boarders" that barely or not quite pay for their feed, is going on constantly in the best herds. Some of these animals go to the butcher; others to amateur dairymen who must learn, or to cow traders to be passed on to careless buyers.

The upbuilding of an industry is a matter of slow, steady growth. Such things have never been done in a month or a year, nor can such be expected here. There were many years of discouragement during the early days of the dairy business in the districts in the Middle West that are now in the lead. Thirty or twenty or even ten years ago the dairy industry in Iowa was of little consequence in comparison to what it is now. The best districts here are developing faster than they did there.

More About Silos

I had a long and very interesting visit recently with a prominent Sacra-

mento Valley stockman and breeder of pure bred cattle, and the talk soon turned to silos.

"Silage is the greatest feed we have," said this "hard headed," practical man, "and there must be many more silos all over the state if we make the best of the dairy industry and increase production as it can be."

This is the verdict of all thoughtful men who are students of the situation.

In the herd of this breeder are some animals of very fine breeding that have never been officially tested, and I asked him why he did not make tests with some of them. "They are bred right, but they were not grown and developed right," he said. "A dairy animal must have great feeding capacity and this is a matter of development that must start when the animal is young. A small amount of dry feed will not make the 'middle' that is necessary to care for the amount of feed that must be assimilated in order to make big records. And that is where the silage comes in. The calves from some of these cows that are being raised on silage and plenty of other feeds will be candidates for records, and big ones."

This breeder has one silo now and expects to build another this fall, and unless his present plans change it will be a stave silo of one of the popular California makes.

I saw another herd of registered cattle not long ago in which cows were not producing the milk they should because they were being fed an exclusive alfalfa ration. Corn silage and some grain would be worth more than its ordinary value to feed to this herd, for it seems that continuous feeding with alfalfa alone so taxes the system of an animal with too much protein that it gets more and more in need of carbohydrates.

The difference in the appearance of the old ewes that have been fed on silage for three weeks at Butte City Ranch, in Glenn County, is very marked and they are eating it greedily. The registered Berkshires are as keen for it as they were at first, and it will make up a part of the daily ration for them as long as it lasts.

I have been interested to note some reports on corn silage feeding by some of the biggest feeders of sheep in the Middle West. One of them says. "A ton of silage produces as many pounds of grain as a ton of hay. It obviates the use of hay entirely. The stock is maintained in healthy condition; in fact I never had a sick sheep or lamb while feeding silage. When starting them on it care is necessary, but once accustomed to the feed they thrive."

The mules at Butte City Ranch are eating some silage with apparent relish and good results. At the North Carolina experiment station it was found that mules could be satisfactorily fed on 20 to 30 pounds of corn silage per day when bran and oil meal were fed to make a protein balance for the carbohydrates in the corn.

Drinking water for cows should be fresh and uncontaminated from any source. The well should be so located and protected that there is no danger of pollution of the water by the drainage from the barnyard, manure piles, or other sources.

SHEEP AND WOOL INVESTIGATORS

By Robert F. Miller

On August 9 to 11 a conference of sheep and wool investigators of Western agricultural colleges was held on the exposition grounds at San Francisco. The following colleges were represented: J. A. Hill, Wyoming; R. R. Dodderidge, Montana; J. T. Cain, Utah; F. D. Wilson, Nevada; R. F. Miller, California, and J. M. Jones, Texas.

The improved system of preparing wool for market was discussed, sheep problems of the different states were considered, and the wool exhibits of foreign nations and the various states were inspected.

Mr. W. T. Ritch of Salt Lake City was present and gave a review of what had been done under the improved system, or the skirting and classing of fleeces, at the Bitter Creek Shed, Wyoming. Professor Hill also told of the success at the Swastika ranch at Laramie, Wyoming.

The general system was highly endorsed by the men present. It is operated on a sound business basis, the wool is put up clean, is classed and is packed in uniform bales, the grower becomes familiar with the grade of wool he is producing, thereby encouraging breeding for same, and last, but not least, the sheep are easily and quietly handled.

The financial advantage is certain to follow as soon as the market becomes adjusted to the new method of marketing. For illustration, we only need to turn to Australia, the greatest wool producing country in the world, practically the same size as the United States and running nearly twice as many sheep.

An association was formed, named "The Range Wool Improvement Association." The advisory committee is to be composed of one member of the animal husbandry division of each of the Western agricultural colleges represented; also one member to act as state instructor who is devoting time to sheep and wool. In this way it is planned to conduct an educational campaign, Mr. Ritch being the official lecturer, to bring this improved system thoroughly before the sheep men of each state. If it meets with approval it is hoped to construct two modern shearing sheds in each state to afford sufficient work for a trained crew for at least four months.

The wool exhibits at the exposition proved very instructive. In the Australian building among other exhibits wool stands out prominent. A striking display of the Australian Merino may be seen here. In the Palace of Agriculture New Zealand has spared no pains in arranging a very attractive display characterized by the selection of crossbred fleeces. Lincoln and Romney fleeces are also well represented and a collection of scoured bellies, pieces and pulled wool is displayed.

The Argentine Republic's exhibit, though not so extensive, shows a collection of wools native of that country, mainly Lincoln-Rambouillet cross. Full information is given with each fleece regarding the breed, shrinkage, etc.

The states of Ohio and Nevada also have attractive exhibits.

Hold on to the best of your dairy heifer calves, and sell some enterprising neighbor your surplus males that are of superior quality.

THE MAKING AND FEEDING OF SILAGE

Silage during the last three decades has come into general use throughout the United States, especially in those regions where the dairy industry has reached its greatest development. Silage is universally recognized as a good and cheap feed for farm stock and particularly so for cattle and sheep, are the observations made in Farmers' Bulletin 578.

Silage is the best and cheapest form in which a succulent feed can be provided for winter use, continues the bulletin. An acre of grain can be placed in the silo at a cost not exceeding that of shocking, husking, grinding and shredding. Crops can be put in the silo during weather that can not be used in making hay or curing fodder, which is an important consideration in some localities.

A given amount of corn in the form of silage will produce more milk than the same amount when shocked and dried. There is less waste in feeding silage than in feeding fodder. Good silage properly fed is all consumed, and in addition very palatable. Like other succulent feeds it has a beneficial effect upon the digestive organs, and more stock can be kept on a given area of land when it is the basis of the ration.

On account of the smaller cost for labor, silage can be used for supplementing pastures more economically than can soiling crops, unless only a small amount of supplementary feed is required. Converting the corn crop into silage clears the land sooner than if the corn crop is shocked and husked, and because of these advantages silage, in the general opinion of dairy farmers, has increased milk production per cow and has increased the profits per acre.

Corn

In all parts of the United States where the silo has come into general use the principal silage crop is corn. One reason for this is that ordinarily corn will produce more food material to the acre than any other crop which can be grown. It is more easily harvested and put into the silo than any of the hay crops, such as clover, cowpeas or alfalfa.

Furthermore corn makes an excellent quality of silage. The legumes, such as clover and alfalfa, are liable to rot unless special care is taken to pack the silage thoroughly and force the air out. The only objection which has been raised concerning corn silage is the fact that it contains insufficient protein fully to meet the requirements of animals to which it may be fed. The best variety of corn to plant is that which will mature and yield the largest amount of grain to the acre, since the grain is the most valuable part of the corn plant. The variety commonly raised in any particular locality for grain will also be the most satisfactory to grow for silage.

Sorghums

Sorghums, both saccharine and non-saccharine, are readily made into silage. On account of their superiority to corn as drouth resisting crops they are more commonly grown in those regions of the West where the rainfall is too light or irregular for a good growth of corn. It is important that the sorghums be harvested at the proper stage of maturity if the best results are to be secured. A mixture of corn and sorghum has proved satisfactory in some localities where the rainfall was so variable as to make the corn crop uncertain.

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The Greatest Sale in the World Combination Sale

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175 Registered Holsteins 175
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70 Advanced Registry cows—more than in any other sale in the world—with records as high as 31.47 lbs. butter and 713 lbs. milk in 7 days and 828 lbs. butter in 1 year.

70 daughters of Advanced Registry cows with records as high as 33 lbs. butter in 7 days and 1000 lbs. butter in a year. Included in this list are daughters of many of the greatest sires of the breed.

Sons of 30-lb. cows and sons of 1000 lb. butter cows (one a world's champion). A great selection from which to choose your next herd sire.

And King Segis Pontiac Emperor, senior herd sire of A. W. Morris & Sons, in whose blood flows the blood of more world's champions and great record cows than any other bull, living or dead, and Lorena Korn-dyke, the world's greatest show bull.

Altogether the greatest array of Holstein cattle in respect to individuality, breeding and great records ever led into any sales ring.

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175 High-Class Animals 175
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Consigned by seven breeders whose integrity is above reproach and who assure you good cattle and good treatment.

We might say more about the

25 Advanced Registry cows, including the cow with the record of 29.90 lbs. made as 4-yr.-old and the cow with the record of 24.45 made at 3 yrs.

30 daughters of Advanced Registry cows, including the daughter of a 30-lb. cow, 2 daughters of the 29.90-lb. 4-yr.-old, daughters of the 24-lb., 3-yr.-old, daughter of a 24-lb. 4-yr.-old, 3 daughters of a 22.50 cow, and the others,

Granddaughters of the famous sires, including 15 granddaughters of Colantha Johanna Lad, sired by his best bred son, Colantha Sir Pontiac Aaggie.

The great sires the females are in calf to, sons and brothers of world's champions, and about how their calves will be worth more than they will bring.

The 20 high class males, most of which are ready for service,—

But we want you to judge for yourself at this, the greatest of all Breeders' Sales.

Write for Catalog.

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SELECTED FROM A
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FEET WHICH WE
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BUILT TO ORDER, TO SUIT ALL USES AND
USERS. CHEAPER THAN METAL TANKS.
LAST LONGER. WON'T RUST. CAN BE TAKEN
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CAPACITIES, 500 TO 500,000 GALLONS.
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FOR WATER SUPPLY—IRRIGATION OR POWER. CHEAPER THAN ANY OTHER PIPE OF
EQUAL SIZE OR CAPACITY. LONGER LIVED THAN ANY METAL PIPE EXCEPT CAST IRON.



REDWOOD MANUFACTURERS CO.

1604 Hobart Building, San Francisco

HOLSTEINS AT THE SACRAMENTO SALE

Referring to some of the fine blood lines which will be represented in the coming Holstein Sale at Sacramento, Mr. McAlister writes:

King of the Pontiacs is the sire of 164 Advanced Registry daughters

approximate cost of keeping her was \$50 a year, or a total of \$750.

The average daily production of milk for the 15 years was a little more than nine quarts a day. During her best year she produced a little more than 18 quarts a day.

If the butter was sold instead of the milk, at the price of 35 cents a pound, the total for the butter pro-



King of the Pontiacs

including the world's champion 44-pound cow and also King Pontiac Topsy, senior herd sire of McAlister and Son. Twenty daughters of King Pontiac Topsy, many in calf to

duction from Grace Briggs would be \$2,041.55.

The Orange County Fair will be held in Santa Ana October 12-16.



Tilly Alcartra

Tilly Alcartra Son, will be sold at the Morris-McAlister combination sale to be held in Sacramento, October, 6-7.

Tilly Alcartra is the dam of Tilly Alcartra Son, junior herd sire of McAlister and Son, and nearly 40 cows and heifers in the Sacramento Sale will be in calf to him. Tilly Alcartra has the following record: Butter, seven days, 32.23; milk, seven days, 783.7; butter, one year, 1189 pounds; milk, one year, 30,452 pounds (world's record).

NINE QUARTS DAILY FOR 15 YEARS

Fifteen years ago an assistant in the dairy department of the University of Missouri began to keep a record of the milk and butter production of a small Jersey cow. This assistant has gone and others have come and gone, but the Jersey cow is still on the job. In the 15 years she has produced 108,968 pounds of milk and 5000 pounds of butter fat, or 5,833 pounds of butter.

Her best year's record was 13,322 pounds of milk and 730 pounds of butter.

During the 15 years this cow, Grace Briggs, has given birth to 12 calves. Her last calf sold for \$300, and the average for the twelve is about \$200. About \$2,400 was obtained from the sale of all the calves. Figuring the entire milk production for 15 years at eight cents a quart, the total would be \$4,358.72. The

The four important memory gems to be committed in rearing bright and ambitious calves are:

Keep the pails clean.

Feed regularly milk of the same condition and temperature.

Turn on green pasture only after wet feeding is discontinued.

Supplement the milk with a suitable grain and roughage ration. Increase this gradually as growth advances.

TEN GUERNSEY COWS AVERAGE 947 lbs. FAT

Large and Economical production is the key to larger profits. The Guernsey Cow is a sure way to increased profit.

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Poultry for Profit

THE PROS AND CONS OF FALL HATCHING

Written for the California Cultivator
By Jean A. Koethen

GENERALIZING is rather risky business except in matters of absolute right and wrong. Particularly is this true in matters of poultry culture for so many considerations enter into almost every transaction. Were I asked "Would you hatch in the fall?" I should reply, "Yes, if—, and if—, and if—; otherwise not." Ifs and buts are such tiresome things, and yet one has to sit down calmly and count the cost of this and that and look at the matter from all directions.

Hatching Costs More

First as to the cost of fall hatching. There seems to be no doubt that a fall chick costs more in actual coin of the realm than a spring chick. That is, a hen-hatched fall chick costs more than a hen-hatched spring chick. I wouldn't be sure that a hen-hatched fall chick costs more than an incubator-hatched spring chick, for hen-hatching is always cheaper. Neither would I be sure that a hen-raised fall chick costs more than a brooder-raised chick of any season, for hen-brooding costs much less than brooder-brooding. But we get into very deep water here and I shall have to be fished out if I am not careful.

What I started to say was that other things being equal, fall hatching costs more. Eggs are worth 35 cents in August and 40 (we hope) in September. In March and April the producer is lucky to get 25 cents. Fertility too is apt to be less strong in August and it is quite sure to be in September. These two items, fertility and price of eggs, make a noticeable difference between the cost of the fall and the spring chick.

There is still another item in this expense column. This is the fact that fall-hatched pullets never pay for their raising as soon as do spring pullets. The spring pullet that is hatched at the proper time should be in good laying trim by the first of November. (I am speaking of bred-to-lay pullets), and should lay 18 eggs a month from that time on. Suppose the eggs bring but 40 cents a dozen, she will pay for her raising in two months. The fall pullet on the other hand begins laying in the spring when eggs are 25 cents and hers will bring but 20 cents. Obviously it takes her twice as long to pay for her raising as it does the spring pullet.

Simply for egg production I should never hatch a fall chick. Fortunately there are other considerations.

Meat Brings More

The main reason for hatching chicks in September or October is that as fryers and broilers and roasters they find a much more profitable market in winter and early spring than in summer. Instead of the 17 or 18 cents a pound live weight which fryers bring in August, they will bring in January from 25 to 35 cents. I have received as high as 40 cents, but this was for broilers hatched in January. To get profitable prices it is almost necessary to hatch in the fall or winter.

Another question meets us here. Is there profit in hatching Leghorns in the fall just for the sake of these winter broilers? In the pens of a man who has made a great success with White Leghorns I noticed the last time I visited him a lot of Rhode Island Reds. When I remarked on their presence he said they were for winter broilers. Evidently he thought Leghorns not quite as profitable as they should be for this purpose. The trouble with the Leghorn seems to be that while it reaches the weight of one and one-half pounds as quickly as a Rock or a Red, it grows very slowly after that and is of little value as a fryer and worthless as a roaster. Far be it from me to "knock" the Leghorn. It is the one layer of commercial eggs that has stood the test of time. But eggs and meat are rarely produced in perfection by the same bird, and no one has ever claimed that the Leghorn was a table bird.

If I bred Leghorns and nothing else, and if I were obliged to do all my hatching and raising artificially, I should think a good while before I made up my mind to hatch in September, that is unless I really needed more layers or better layers.

Are September Pullets Better Layers?

How much is there in the contention that the fall-hatched pullet will be a better layer than the spring pullet because her mother is a better layer? I do not know. Among Leghorns the hen that lays in August is one of the better layers of the flock. Among heavy breeds she may be one of the better layers and she may be merely the hen that raised a brood in late spring and is just back on the job. But granting that the August layer is the choice layer, will her daughter be? Experiment stations have proved to their own satisfaction at least that fecundity passes through the male. If this is true the son of an August layer might be better qualified to pass on fecundity to his daughters than would a male hatched in the spring, but when we come to questions of heredity we are in very deep water again. It seems to me the only way to build up a laying strain is to find out exactly which are the best layers and breed them and from them alone. There has been too much guesswork in our poultry breeding.

One thing must however be said in favor of the fall pullet. She will not molt as early in the summer as the spring pullet. A spring pullet begins laying in the fall or winter and lays till the following August when she goes into molt. The September pullet begins laying in March and is likely to lay till December before she molts. She is therefore shelling out high-priced eggs while the pullets hatched five or six months earlier are resting. This is a great advantage and may balance the additional cost of the bird. I said "likely to lay" for there is some uncertainty about the molting of fall pullets. As often as not, may be a little more often, they lay till winter, but sometimes they disappoint us.

As to The Hen

When I think of September hatch-

ing, the picture that comes before my mind is a picture of a big, fluffy comfortable mother biddy sitting quietly on 15 eggs in the cool shade of a tree and coming off some hot day in September to hover her chicks in the shade of the same tree. It's little protection she needs then, and her chicks are in the open from dawn till sunset. The long fast makes her feathers drop quickly and completely, and while she cares for her babies she is growing her new coat. She ought to be laying by Thanksgiving, and this comfortable molt, with the complete rest, conserves her strength and vigor. I have a theory which I have not the data to prove, that a hen of the heavy breeds allowed to molt this way and to raise a brood in the spring ought to lay as many eggs in a year as a Leghorn and to keep her laying powers a year longer. That is, she ought to if she is not allowed to get fat. A two-year-old Rock or Orphington must be fed very carefully or she becomes too fat to lay.

Chicks Are More Easily Raised

Fall hatching is a matter par excellence for the heavy breeds. It is good for the mothers, splendid for the chicks and produces profitable table fowls. But it has its advantages even when artificial methods of hatching and brooding must be employed. The September chick needs no heat. A fireless brooder is the best of foster mothers. This makes cheaper brooding and healthier chicks, and there should be fewer losses. As the chick grows stronger the weather becomes cooler. This is a great advantage to the growing chick. Mites are less troublesome. With the first rains all sorts of green feed is at hand if the chick has range. If it has not the green feed is more easily grown than in summer. It is not without reason that fall in California is called our second spring.

Protection Necessary

But the September chick must have protection from the weather. Cold winds and rains may be expected in November and chicks of the lighter breeds feel this change greatly. Even chicks with hen mothers must be shielded from the wind. It is for this reason that I speak of the fall chick as a September chick. A chick hatched in September has six weeks of warm weather ahead of it in which to prepare for the cold. Two years ago a cold norther in November carried off a number of my October Buttercups. They were with a hen too. Had they been hatched a month earlier, or had they been Orphingtons, they could have weathered the storm but they were too young and too closely feathered. It is the birds with loose fluff that can endure sudden changes in temperature. By the time the winter rains set in a September-hatched bird is able to care for itself with any reasonable shelter; but it should have a dry place to scratch in and sleeping quarters that can be made rain-tight. I should not hatch a single chick that I could not make comfortable.

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Wanted—Man to work 45 acre young Valencia grove near Orange, on salary, cash or share basis. Must loan me \$1000.00 or take part interest in grove for labor or other property. Herbert F. Clark, 31 N. Granada, Alhambra, Cal.

Farm Hand who can drive car, truck or team, understands gas engines, centrifugal pumps, irrigation and general farming, could take care small place, wants long time job. Have reference. Address V. C. care of Chas. Wiro, Chowchilla, Cal.

Combined stenographer and choreman, competent, business experience, run gas engine; sober, industrious, now employed; wants engagement on or before November 1st. Good references, furnish bond if desired. Address Box L, care Cultivator.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.



Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Injured Eye

I have a mare that lost an eye some time ago. The eyeball is entirely gone and the eye has been discharging matter ever since. A few weeks ago a growth commenced and has grown until it fills the eyesocket and is as large as a walnut on the outside. The eye is discharging all the time and has a very disagreeable smell. Kindly inform me what can be done for it.—Subscriber, Earlimart.

You think the eye is entirely gone but probably the fluids have only run out and a tumor has grown in their place. The only way to relieve it will be to have the eye entirely removed. That can only be done by one who understands the anatomy of the eye. If it is done properly it will soon heal and give you no more trouble.

Congestion of Udder

I have a four-year-old cow that came fresh April 1st with her third calf. Has always been a heavy milker. About two months ago I found one quarter of the udder hard but at next milking it was normal and the milk was stringy. A few days later it occurred again and acted as before. This has happened several times, sometimes in one quarter and sometimes in another. Pasture her on alfalfa and feed her alfalfa and sorghum in corral. The milk flow has diminished considerably.—Subscriber, Earlimart.

The curdled milk is caused by congestion of the udder. The congested udder indicates heavy feeding and a clogged system. Relieve the system and thin the blood by giving a physic of aloin four drams, turpentine two ounces and raw linseed oil one pint. Mix and give at one dose. Follow this by giving a handful of epsom salts in the feed once a day for two weeks.

Cows Poisoned on Milo

Four weeks ago I turned seven cows into a field of half-grown milo that

looked too dry to mature corn. For two weeks cows did well and gained on flow of milk. About this time three of the cows showed signs of weakness in hind legs, one cow wanted to urinate very often. Cows were immediately taken from the milo. Two got all right in a few days but the one that wanted to urinate so often continues to do so. Gave her some kidney capsules but derived no benefit. She humps up and strains but urine only comes a few drops at a time. Appetite is good but she is quite thin. Can you tell me what to do for her? Is the milk all right to use?—Subscriber, Chowchilla.

When milo or millet is only partially matured cattle seem to like it and will eat very freely of it. The partly matured seed or some part of the plant will sometimes affect cattle as you describe. When the crop is cut in that stage and made into hay it is also inclined to affect the kidneys but if left to ripen it makes better feed. Linseed tea is best to relieve the kidney trouble. Use ground flaxseed with the oil in. Put a pint of it in a bucket and pour on a gallon of hot water. Let stand until cool, then fill the bucket with cold water and let the cow drink

it. Repeat this twice a day and it will probably relieve the trouble in a few days. The milk will be all right as soon as she is relieved.

Cows Sick

I am writing for advice in treating sickness in cows. Have had two cases almost similar. One quarter of the cow's udder becomes caked, is very tender to the touch and in 12 hours they are down and unable to rise for about 36 hours. Then they get up with difficulty but commence eating and improve right along. Seem to be partially paralyzed or very weak. Gave several doses of epsom salts, then several doses of salt petre and rubbed udder with soap liniment. Am feeding green alfalfa night and morning, green corn stalks at noon with alfalfa hay in racks in corral. Please give cause, prevention and treatment if possible.—Subscriber, Riverside.

Unable to name the disease or the cause. Am inclined to think that the heavy feeding and possibly some weeds in the hay are the cause. Your treatment seems to have done all right. Would advise reducing the feed and giving a handful of epsom salts occasionally.

insect powder of various kinds but the ants still come.—Subscriber.

It is probable the nests of these ants are in holes in the ground near the hutches. A little carbon bisulphide poured down these hills will probably lessen the nuisance. Even boiling water is a help. By exercising a little patience, you can follow the trail from the infested place to the nests. In the hutches we would use buhach freely, making sure that it is fresh. In order to make sure that it is fresh buy in the original cans. Its effectiveness lasts only for a day or two when it loses its repelling power, but continued use of the powder, if fresh, will keep the ants away.

Enlarged Crop

Two young turkeys had their crops enlarged until they hung like bags. Not much in them but water which ran out when I held them by the legs.—Subscriber, Ceres.

Enlarged, or as it is sometimes called pendulous, crop is generally caused by too heavy feeding without sufficient intervals between meals and without sufficient exercise. Turkeys seem to be especially subject to it, probably because they are apt to be greedy and are less able than chickens to digest large quantities of food. It is sometimes possible to cure these cases by bandaging the crop. Wrap a small bandage, not too tightly, about the crop and the neck in such a way that the crop is supported, and see that the birds do not eat too heavily for a while. If they have fairly good range a little wheat at night will be all they need and they will be all the better off if they are obliged to hunt for their food. If the bandage does not relieve the trouble, you may have to resort to this operation, which is recommended by Dr. Sanborn: Cut out of the enlarged portion of the crop a diamond or oval-shaped piece of tissue two inches long and one inch wide. Sew the edges together and wash out the crop thoroughly with clean, warm water. The edges of the wound should be well greased with vaseline. I have not tried this operation and I should not like to try it, for these things are always more difficult than they appear on the surface. If bandaging and careful dieting did not relieve those birds I should get them to market as soon as possible and be careful that the rest of the flock eat less and exercise more.—J. A. K.

Intestinal Trouble

Hen staggers about. Sometimes can walk a few feet before she falls.—Subscriber, Ceres.

I think your hen has some intestinal trouble, either a mild case of ptomaine poisoning from eating spoiled or putrefying food, or possibly worms. The first thing to do is to clean out the intestines with a laxative (two teaspoons castor oil, 30 grains of Epsom salts given in water, or one and one-half grains of calomel). Keep her in a cool quiet place and try to find out the cause. If you find worms in the droppings after the laxative, give 20 to 30 drops of oil of turpentine mixed with an equal quantity of olive oil, and follow this in two hours with two to three teaspoons of castor oil. Treatment for worms should always be given when the crop is empty.—J. A. K.

WILLIE'S COME DOWN

Little Willie, after flattening his nose against the outside of the baker's window for about half an hour, at last entered with his mind evidently made up.

"I want to know," he said in a deter-

mined yet hopeful voice, "how much those wedding cakes are?"

"Well," answered the enterprising proprietor, "I have them at all prices. Tell your mother that I can do her a beauty for \$20. The cheapest is \$10."

"Ah, well," he murmured, in a resigned voice, "let me have one of those one-cent gingerbread rabbits."—Galtimore American.

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Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Temporary Windbreak

What is the best temporary windbreak for the Coachella Valley? Am up on the slope and in a section comparatively free from frost.—Subscriber.

There is no variety of field corn with which we are acquainted which would answer your purpose. It may be, however, that you could use a rapid growing variety of sorghum. This would make a thick growth before the cold weather and if there was no hard freezing would keep its erect position fairly well all winter.

Either Early Amber or Kansas Orange sorghum should make rapid growth if sowed during the first part of September, but to get the best growth it should be planted in rows so it could have some cultivation for the first two months. The seed can likely be had at any good seed store.—J. B. N.

Pipe Capacity

What size of concrete pipe is necessary to carry 500 gallons of water per minute, slope seven feet to the mile?—Subscriber, Arroyo Grande.

A 12-inch pipe with the slope given will carry 550 gallons per minute.—J. B. N.

Moving Small Fruits

What is the best period of the year in which to move loganberries and dewberries?—Subscriber, Fillmore.

January and February are probably to be preferred, or at least a time when the plants are as nearly dormant as possible. Of course plants which have been produced by tipping may be planted later if growth starts.

Rations for Sows, Pigs and Fattening Hogs

I am raising hogs. Have them divided into three lots so as to separate brood sows, growing pigs and fattening hogs. I feed soaked barley, soaked milo, beets and alfalfa (green and dried). How should I divide the feed to the different lots so as to give each

the best ration?—R. A. H., Chandler, Arizona.

Answered by F. W. Woll, University Farm, Davis.

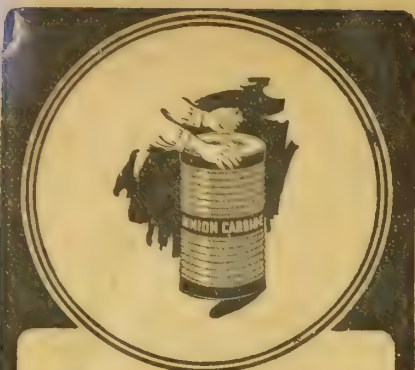
Excellent rations for brood sows, growing pigs and fattening hogs may be made up from the feeds given but as suggested the proportion of the various feeds will vary with the three groups of animals. The brood sows should receive all the feed necessary to keep them in a good body condition, and succulent feeds like beets, green alfalfa and dairy by-products, are of especial value because they favor the milk secretion. In addition, as much grain, say barley and milo, equal parts by weight, is fed as they will eat readily.

When a couple of weeks old the pigs are given some feed of their own in a small trough; the same grain mixture will do and the amount given is increased as rapidly as they are able to clean up more. If the sows and pigs are put on good alfalfa pasture less grain is required, but some grain must be fed to both classes to prevent the sows from getting too thin and to enable the pigs to make a more satisfactory growth.

Fattening hogs are fed similar rations as the sows, except that it is not always important to provide succulent feed, although it is quite desirable also in this case. In addition to hay and roots, they are fed grain, about 2 per cent of their body weight. The amount of grain fed must, however, depend on the prices of feed and the condition of the market. If the hogs are to be marketed within an early period the feeding must be more intensive than otherwise, but the amount given, about two per cent of the live weight of the hogs, per head daily, is a good average figure by which to be guided.

Ants in Rabbit Hutches

What will rid rabbit hutches of ants? Have thoroughly cleaned but that is ineffective. The mother does will not enter the nest to suckle the young and they soon die. Have used



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A GARDEN AT DUSK

When down my garden aisles I look
At twilight's hour, each bush and row,
Each thick grown spot, seems like a friend

Such as one loves to know.

Their dusky forms, in shade outlined,
Seem never strangers to my view
For closely side by side with them,
I've toiled the long hours through.

And as one grows to love a friend
Proved true through many busy days,
So do I love these friends who live
Among my garden ways.

When through the dusky aisles I stroll,
And plan the work that yet must be,
I know that I am welcome in
A friendly company.—Arthur Wallace Peach.

HOUSE FOR SALE

By Alice Louise Lee in Youth's Companion

MR. AND MRS. BILLY KEENAN sat in the living room of their little house on Stuyvesant Place — sometimes known as "Friendly Street."

"Billy," Mrs. Billy exclaimed from behind the Washington evening newspaper, "listen to this: 'House for sale. Six rooms and bath. Laundry in basement. Apply to J. H. Hamlin, 60 Stuyvesant Place.'"

She emerged from the folds of the paper.

"Why should they want to sell their house just when they've decided to adopt Mr. Hamlin's little nephew, Edwin?"

Billy Keenan's eyes twinkled as he looked at his wife's round, flushed face. "I don't know," he said, "but I prophesy that you'll find out within a week."

Mrs. Billy regarded her husband suspiciously for a moment, and then devoted herself again to the affairs of the nation's capital. The following day she had forgotten his prophecy, but within the week she had, nevertheless, fulfilled it.

When Billy came home on Saturday afternoon he found Mrs. Hamlin leaving his house, and Mrs. Billy, in a white voile dress with pink ribbon attachments, standing in the doorway, looking sympathetic, and, he thought, altogether attractive.

Mrs. Hamlin was a tall, nervous woman, with a thin, delicate face. At that moment her thin lips were pressed together unpleasantly, and her eyes had an aggressive expression.

When the door had closed behind the visitor, Mrs. Billy, with her face against her husband's broad shoulder, said in a muffled voice, "Billy, they have advertised their house for sale

because they simply can't endure this neighborhood any longer!"

"What!" cried Billy incredulously. "Not endure us? Why, we're the only real and original neighbors in Washington! She couldn't find a nicer or quieter spot than this little block. Some of the finest government men are here." Mr. Hamlin as well as Billy was devoted to "Uncle Sam's" interest in the Forestry Department. "There are Hone and Carter, for instance, who live next to them. Where will she find finer fellows than they?"

Mrs. Billy's eyes twinkled. "She knows those two men only as the fathers of a good-sized collection of badly managed children. And, Billy, did you mention 'quiet'? She says it would be less wearing on her nerves to live near a train yard than between those five young Carters and three Hones. She says Mr. Hamlin is determined that his nephew shall not associate with the little 'hoodlums,' as she calls them."

One afternoon not many days later, Billy walked home from the office with Mr. Hamlin, who for the first time became confidential in regard to his views of the street. And as if to substantiate those views, no sooner had they gained the corner of Stuyvesant Place than two Hones and three Carters came careering along the walk on roller skates. When directly opposite the two men, the youngest Hone lost control of his feet, and the sharp edge of his skate caught Mr. Hamlin just under the ankle bone.

"When he limped up his steps," said Billy to his wife, a few moments afterward, "I never saw a madder-looking man in my life! Of course the little hoodlums have no business to skate on the walks."

"Oh, I shall hear all about it tomorrow," said Mrs. Billy, laughing, "for I've promised to help Mrs. Hamlin get ready for Edwin. He comes the last of the week."

But when Mrs. Billy reached 60 Stuyvesant Place in the morning, she found Mrs. Hamlin absorbed in grievances of her own. The biggest Carter boy had fallen into her pansy bed from the top of the fence that divided the back yards.

"Was he hurt?" Mrs. Billy gasped. The solidly boarded dividing fence was at least twelve feet high.

Mrs. Hamlin choked. "I don't know. He has ruined the pansies. They look as if a steam roller had gone over them. I can't wait to get away from this awful street!"

Mrs. Billy tossed her small curly head, but did not reply. The two ascended the stairs to the airy front chamber, which overlooked the shady street.

"I hope," said Mrs. Hamlin, with a sigh, "I may be given strength and wisdom enough to bring little Edwin up well. I hope we shall find him quiet and gentlemanly, and considerate of other people's feelings and property."

Little Edwin was six years old. Presently there sounded on the street below the excited whoops and joyful yells of the five Carter children on one side and the three Hones on the other. A stiff breeze was blowing up the street, and soon outside the second-story window floated home-made kites of all shapes and in all stages of dilapidation.

"Oh! oh!" cried Mrs. Hamlin, with her head out of the window. "They've upset the jar of roses I put on the lower step; and there stands Mrs. Carter just beaming at them, and never noticing my roses. How can anyone be so thoughtless? If I could move tomorrow—" Here her voice was lost in the joyful shouts from below.

That night Mrs. Billy told Billy that she was growing nervous. "Somehow, when I'm with Mrs. Hamlin I hear the children's noises so much more plainly than I do anywhere else, and seeing her jump and start and fuss at them makes me jumpy, too."

"Then," said Billy, earnestly, "for the love of goodness stay away from Mrs. Hamlin!"

Mrs. Billy stayed away for two days. Then Mrs. Hamlin called to relate two items of overwhelming importance. Edwin was due to arrive that evening at 60 Stuyvesant Place, and the house had a prospective purchaser.

"It's a man by the name of Sherry," said Mrs. Hamlin. "He has a two weeks' option on it, and we're looking for an apartment. I want to take Edwin off the streets, so that he won't be killed or mangled by carts—and roller skates."

The evening was hot and sultry. Stuyvesant Place, leaving its windows open to catch any belated breeze that might blow, was sitting out on its doorsteps or in its tiny plots of grass; its eyes were turned expectantly toward Number 60. That is, the older members of the community sat in the manner described. The younger members were massed in front of Number 60, waiting to look Edwin over. He finally arrived in a closed taxicab, and was hastily conveyed in the arms of his uncle through the waiting ranks.

Billy, sitting on his own steps with Mrs. Billy, grinned broadly. His comments were tinged by a recollection of Mr. Hamlin's opinion of the street. "That was done with neatness and dispatch," said Billy. "The child is now beyond the contaminating influence of the Carters and Hones. His feet have not touched the pavement that theirs have trod. Wonder if they have a glass case for him yet?"

Fifteen minutes later Billy amended his last remark vigorously. "Cats and dogs! Talk about a noise! I wish the glass case were here—and he inside of it! Whe-w!"

The noise came from Number 60, and caused the inhabitants of the little street to hold their breaths. Finally Mrs. Hone and Mrs. Carter hastened down to the Billy Keenans.

"Isn't that racket awful?" said the mother of the riotous Carter five. "I can endure any amount of happy noise, but it makes me wild to hear a child cry like that."

"Of course neither of the Hamlins know anything about caring for such a baby," said the mother of the three mischievous Hones, "but we hesitate to go and offer our services because they—well, they're so unlike the rest of the street—not neighborly; and lately she has been positively snippy. But she comes to see you, and we thought we'd ask your advice. Would it do for us to offer—"

"Oh, yes!" interrupted Mrs. Billy eagerly. "Do go before that child splits his throat!"

"And our ears!" added Billy.

Mrs. Hone and Mrs. Carter hastened up the steps of Number 60, and disappeared. Presently the windows of Number 60 banged shut, and muffled the noise within. Soon Mrs. Carter appeared on the top step, and calling the smallest Hone and two young Carters, drove them into Number 60. Then quiet reigned.

An hour later two good Samaritans came down the street again to report progress to the neighborhood.

"There's nothing like children to comfort children," Mrs. Carter explained. "We left Edwin playing with ours. He seems more used to being with children than with grown people."

"The Hone and Carter hoodlums to the rescue!" exclaimed Billy, after the mothers had gone. "Will the Hamlins survive?"

The next afternoon, when Billy reached home, Mrs. Billy met him. "Billy, guess what's going on in the Hamlin house?"

"I hope that the little chap isn't going on as he did last night!"

Mrs. Billy chuckled. "No, but Mrs. Hamlin is so afraid he will that she has had the Carter and Hone children there all day. She's clinging to 'em as a drowning man clings to a straw. They are swarming all over her basement and back yard and front steps. Oh, the racket they are making! And I noticed that Edwin is the loudest one among them. But I think he is a lovable little fellow, and I can see that Mrs. Hamlin thinks so, too."

The option on the Hamlin property was five days old before Mrs. Billy again saw Mrs. Hamlin. Edwin's foster mother was standing in her front doorway. A smile hovered about her

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lips and softened her eyes. She was watching a street parade by the neighboring children; Edwin was in the heart of the parade. A Carter grasped one hand, a Hone the other, and both a Hone and a Carter had affixed themselves firmly to the rear of his blouse. They occupied the middle of the highway. A milkman's cart approached, and, with the others, the diminutive Edwin lifted his voice in frantic commands to the driver to get out of the way. In her doorway Mrs. Hamlin fluttered nervously, and called:

"Why, Edwin darling! Is that the proper way to speak to the man?"

Edwin, not hearing, continued in his own form of aggressive address, and the parade, unhampered by further obstructions, swept noisily down the street. When the option was a week old Billy came home from his office laughing. "It's rich to hear old Hamlin," he declared. "He's got little Edwin's points down superfluous. It's really all he wants to talk about. I dropped into his office to tell him that I had heard of a good apartment at a bargain price, and he kept me there for an hour, telling me about the boy. You'd think Edwin was the only child ever born."

Mrs. Billy laughed. "Mrs. Hamlin shares his opinion, Billy. You see, they've discovered that Edwin is a very unusual child! Mrs. Hamlin admitted today that he was noisy, but said there was so much more character in his noise than in most children's that she hesitated to check him!"

When the option was ten days old Billy again walked up from the office with Mr. Hamlin, who carried under his arm an awkward package. Mr. Hamlin refused to divulge what the contents of the package were; but as they turned a corner, Billy accidentally knocked against him, and the bundle went to the pavement, the string broke, and out flew a pair of roller skates. Mr. Hamlin, smiling broadly, picked them up.

"Boys will be boys," he said, cheerfully, "and nothing would do but Edwin must have roller skates. Now I'll have a dickens of a time teaching him how to use them!"

The "dickens of a time" began that very evening, when Edwin and his teacher occupied a large area of the sidewalk in front of Number 60, and the passers-by prudently took to the middle of the street. Mrs. Hamlin,

wholly unaware of the discomfort of the passers-by, sat on the top step eagerly exchanging views on child culture with Mrs. Hone and Mrs. Carter. Billy Keenan looked at Mrs. Billy, whistled softly, and remarked that if anyone said that a leopard could not change its spots, please refer that person to William Keenan!

The day that the option expired, Mr. and Mrs. Hamlin came to call on the Keenans, and brought Edwin with them. Conversation was difficult. When Mr. Hamlin was not straightening the child's collar, Mrs. Hamlin was reknitting his tie; occasionally they combined their efforts to keep him from climbing on the piano or pounding the glass in the bookcase.

Suddenly Mr. Hamlin, removing his eyes for an instant from his heir, saw a man passing the bay window.

"Bless me, it's Sherry!" he said, making a dive for the door and the holder of the option.

When he had finished his conversation with Mr. Sherry, he found his wife and Edwin awaiting him on the Keenan doorsteps. In the doorway stood Mr. and Mrs. Billy.

"Don't believe we've told you that we've changed our minds about selling," Mr. Hamlin remarked to the doorway. Then, with the complacent self-assertion of one who announces original discoveries, he added, "This is such a quiet street to bring the boy up in, so few trucks or autos to look out for, and a kindergarten so handy—it seems foolish to move out. Good, friendly, helpful neighborhood, too—none better!"

Mrs. Billy gasped; Billy coughed; but the Hamlins heard nothing and saw nothing except Edwin, who buried his sleepy face in his new mother's skirt. A smile lighted her thin face, and made it look sweet and motherly.

"I feel so safe when he is out playing with the Carters and Hones," she said, in further explanation. "They take such excellent care of him, and with Mrs. Carter and Mrs. Hone next door in case of colic or croup—ah, no, we shall not sell!"

HOW TO CAN BEANS FOR WINTER USE

Green beans, which are so plentiful at present, may be canned easily. The home economics department of the University of Missouri at Columbia tells how to can them. In preparation wash and string the beans as if for immediate use. Next pack them in jars as tightly as possible, covering with water and adding a teaspoon of salt to each quart. Put on the rubbers and tops, adjusting loosely, then place on a rack of some sort or layer of straw in the bottom of a boiler and cover with clean water. Boil for two hours, counting from the time the water begins to boil. Remove from the water and seal immediately.

The best jar for this purpose is one that fastens with a wire spring. In using this style of jar the glass tops are put in place, held on loosely with the wire passing over the top. After removing from the hot water the wire spring is tightened, thus sealing the jar. The reason for sealing while hot is that steam, not air, will be contained in the jar. This steam condenses when the jar cools and leaves a vacuum which holds on the top of the jar.

The jar should be tested from day to day by releasing the spring. You should be able to lift the weight of the jar by the glass top. If the top loosens when this is tried the sealing is imperfect or the contents of the jar is spoiling. If the spoiling has not gone too far, the contents of the jar can be resealed in the same way as at the beginning.

ON TIME

This truth I'm spreading near and far, by means of loosed rhyme: You'd better do without a car than buy a car on time. Who are the folks who fume and fret, the while their bosoms bleed? They are the ones who go in debt for things they do not need. Their names will fill a catalogue in this debt-ridden clime; you'd better do without a horse than buy a horse on time. How happy is the man who knows he does not owe a bone! The grosser sorts of griefs and woes are leaving him alone; the "charge it" course he won't indorse, nor owe a man a dime; you'd better do without a dog than buy a dog on time.



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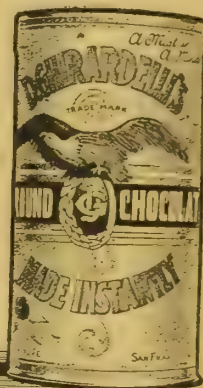
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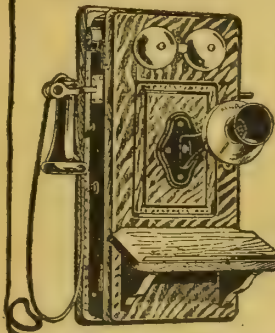
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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, September 1, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
Arizona Longhorn17½
California Fresh13½
Cheddar20½
Domestic Swiss20
Eastern Daisy18½
Eastern Twins17½
Imported Swiss40
Longhorn17½
Oregon Triplets15½
Tillamook15½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts30
Candled82½
Petaluma-Santa Rosa30
Northern Fresh Extras30
Other Outside Stock29

Prices to producers:
Hens, lb.11½
Roosters, old9
Broilers, lb.17
Fryers15
Roasters, lb.15
Turkeys14½
Ducks12
Geese11
Squabs, doz.100

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7.75
Prime Steers7¼
Heifers6¼
Calves, lb.8½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head4.75

POTATOES

Wholesale selling prices:
Merced, lug90
Sweets, yellow, lb.3
Northern Burbanks1.15

ONIONS

Wholesale selling price:
Boiling Onions, crate1.35
Brown, cwt.1.00
Crystal Wax, crate90
Red, cwt.1.00
Local Silverskins, lug50
White Globe, lug50
Garlic10
Sets, White and Brown, lb.10

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00
Beets, doz.1.10

Beans—
Wax5½
Limas3¼
Green5½
Cabbage, sack70
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.40
Chicory, doz.40
Chives, doz.1.00
Corn, lug35
Cucumbers, lug30
Pickling, lug1.00
Egg Plant, lb.30
Escarole, doz.40
Horseradish, lb.10
Leeks, doz.40
Lettuce, doz.30
Mint, doz.40
Okra, lb.4½
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.35
Parsley, doz.15
Peas, Telephone40
Peppers—
Chilli, Green3½
Bells3½
Rhubarb—
Crimson Winter, box75
Strawberry75
Spinach, doz.20
Squash—
Crookneck, box35
Hubbard, lb.1½
Summer, lug30
Tomatoes—
Lug20
Turnips30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders75
Bellflower1.00
Gravensteins90
Skins' Seedlings1.00
Crabapples, lug1.10
Avocados, doz.4.50
Bananas, lb.4.50
Berries—
Strawberries, tray75
Blackberries, tray75
Raspberries, tray80

Cantaloupes—
Columbia1.50
Tip Top1.50
Paul Rose, crate1.00
Pineapple, crate1.25
Casabas, crate1.75
Cherimoyas, lb.20

Figs—
Calimyrna, box65
Black1.00
Grapes—
Black Hamburg, lug70
Malagas, lug80
Muscats, lug75
Concord, 2-3 crate90
Thompson Seedless, lug75
Tokay, lug1.40
Nectarines, lug1.00
Peaches—
Clings, box1.00
Freestones, box65
Elbertas, lb.1½
Pears, Bartlett, box1.50

Plums—
Hungarian1.00
Climax, lug90
Kelsey65
Satsuma, lug80
Burbank, lug40
Tragedy, lug90
Pineapples, lb.4½
Quinces, lug50
Sugar Prunes, lug65
Watermelons, lb.1

CITRUS FRUIT

Wholesale selling price:
Lemons1.75
Juice Lemons1.25
Grapefruit, Seedless3.00
Limes, basket75
Valencias4.50

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes8½
Apricots8½
Peaches5½
Pears, lb.11
Prunes8

NUTS

Prices named by California Walnut Growers' Association are:

No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Almonds, New—
I X L17½
N. P. U.16½
Drake, Thin Shell18½
Peanuts—
California, Raw6
Japan5½
Eastern7½
Rice Corn5.00

HONEY

Wholesale selling price:
Comb, Fancy, Water White16
White15
Extracted Water White8½
White7
Light Amber6
Beeswax25

RICE

Wholesale selling price:
California4.25
Broken2.75

BEANS

Wholesale selling price:
Limas5.35
Bayous6.00
Lady Washington5.25
Pinks4.25
Black Eyes6.75
Lentils12.50
Small White5.25
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.

Barley Hay11.00
Wheat Hay10.00
Tame Oat12.00
Alfalfa10.50
Volunteer5.00
Straw4.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow2.20
Corn, White2.30
Wheat2.05
Oats, White1.90
Oats, Hulled2.25
Egyptian Corn2.10
Kaoliangs1.60
Barley Seed1.55
Barley, Hulled1.90
Kaffir1.85
Milo1.75
Sunflower Seed7.00

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy1.80
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00
Beef Pulp1.20
Cracked Corn, cwt.2.25
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.80
Bone, Green1.75
Meat Meal3.00
Charcoal1.90
Oil Cake Meal2.50
Fish Meal3.15
Rolled Barley1.50
Rolled Oats1.95
Middlings2.10
O. & W. Middlings1.80
Feed Meal2.30
Scratch Feed2.20
Oyster Shell1.15
Scratch Gritlets2.40

San Francisco Market

SAN FRANCISCO, August 31, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Extras28
Prime Firsts26
Firsts25

CHEESE

Wholesaler to retailer.
Oregon, Y. Am.14½
Young America11½
California Flats8
Cheddar20
New York Cheddar20
Oregon Twins13

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Extras30
Select Pullets26
Hens, lb.14
Price to producer:
Fryers23
Broilers26
Roosters—
Young23
Old10
Squabs2.25
Ducks12
Geese2.25
Belgian Hares, lb.6

LIVE STOCK

San Francisco prices, gross weight:
Steers4
Cows and Heifers3
Calves, lb., live wt.6
Hogs4
Wethers6
Ewes5½
Milk Lambs, lb.7
Shorn stock, ¼@1c less

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.80
Delta Burbanks75
Sweets, lb.2½

ONIONS

Wholesale selling price:
Onions, cwt.40

WEATHER CONDITIONS

For the Week Ending August 28, 1915.

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date
Eureka	.00	.26	.18
Red Bluff	.00	.00	.00
Sacramento	.00	.00	.00
San Francisco	.00	.01	.01
San Jose	.00	.00	.04
Fresno	.00	.00	.00
Independence	.00	.04	.00
San Luis Obispo	.00	.01	.03
Los Angeles	.00	.00	.00
San Diego	.00	.00	.00

Temperature Data

	Maxi-mum	Mini-mum
Eureka	64	50
Red Bluff	110	60
Sacramento	106	56
San Francisco	86	52
San Jose	98	56
Fresno	104	58
Independence	96	54
San Luis Obispo	96	52
Los Angeles	96	58
San Diego	90	62

Bermudas1.00
Australian Browns75
White, crate65
Wax, crate1.00
Garlic, new4

VEGETABLES

Wholesale selling price:
Beans—
String, lb.1½
Limas, lb.2
Wax, lb.1½
Corn, sack75
Cucumbers, lug15
Eggplant, lug35
Lettuce, crate50
Okra, lug40
Peas, sack1.25
Peppers—
Bell, box20
Chili, Mexican, lug20
Rhubarb75
Squash—
Summer, lug20
Tomatoes—
Delta, lug20
Bay20

FRESH FRUIT

Wholesale selling price:
Apples—
Alexander50
Gravenstein70
Bananas, Hawaiian, bunch1.25
Blackberries, chest2.00
Cantaloupes—
Turlock Ponies50
Turlock Standard75
Delta, lug50
Casabas, lb.1½
Figs, box, single layer, black40
White, single layer30

Grapes—
Thompson Seedless, crate65
Tokay, crate75
Muscat, crate65
Malagas, crate60
Muskmelons, box1.00
Huckleberries, lb.7
Nectarines, Red, crate50
Peaches—
Wrapped, box30
Small lug40
Strawberry Frees, lug50
Pears, Bartlett, wrapped1.00
Pineapples, doz.1.00
Plums, crate50
Prunes, crate60
Raspberries, chest10.00
Strawberries, chest1.50
Watermelons, doz.1.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50
Lemons1.50
Lemonettes1.25
Limes, Mexican, case4.00
Tangerines, halves75
Valencias3.50

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Clara, ¾c. All outside sections ¼c lower.
Other Fruits, Stand—
50-lb. boxes—ard. Choice Fancy
Apricots5½c 6½c 7c 7½c
Peaches3½c 3¾c 4c 4½c
Pears7c 8c 9c 10c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6¼c; do, 12-oz., 5c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5½c; Thompson seedless, No. 1, 16-oz., 7¼c; 12-oz., 6¼c; 50-lb. cs., 6¼c; Sultanas, 16-oz., 7¼c; 12-oz., 5½c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatsels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:
Nonpareil16
I. X. L.14
Ne Plus Ultra13½
Drakes12
Peanuts—
Unpolished3½
Polished4½
Shelled, China5½
Italian Chestnuts6½

BEANS

Wholesale selling price:
Limas4.60
Pink3.70
Black Eyes3.50
Cranberry4.00
Small White4.30
Garbanzos3.50
Large White4.30
Bayou4.40
Manchurian Speckled Bayous3.80
Manchurian Butters4.50
Red Mexican5.40
Red Kidney5.90
Horse Beans2.00

HONEY

Wholesale selling price:
Comb, Water White, new14

Light Amber, new	11@12
Amber, new	10
Extracted White	6 1/2 @ 7 1/2
Light Amber	3 1/2 @ 4 1/2
Dark Amber	2
Beeswax	25 @ 28

HOPS
1914

Wholesale selling price:	
Sacramento Valley	8@10
Sonoma-Mendocino	11 1/2 @ 13
Oregon Clusters	11 1/2 @ 13

HAY

Under date of August 28, 1915, Scott, Magnus & Miller say:

Arrivals for the week ending today amounted to 4100 tons. The market is being well maintained. Fancy hay commands topmost figures and is readily placed. Medium types have not moved off quite as readily although demand for this type is better than it has been. A number of the larger consumers are now filling their lots for winter use and others are in the market at the present time negotiating for purchases for this purpose.

Considerable hay has moved for export in various directions and this trade has taken large quantities out of our market.

The alfalfa situation remains practically unchanged excepting that many producers who have not yet sold are holding at a little better figure than prevailed on the earlier cuttings. What alfalfa has come into our markets has been readily taken at full figures.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt. bales)	13.50@14.50
No. 1 Wheat or Wheat and Oat	11.50@12.50
No. 2 Wheat or Wheat and Oat	8.50@10.00
Choice Tame Oat	11.50@12.50
Other Tame Oat	9.00@10.50
Barley	8.00@10.00
Wild Oat	7.00@9.00
Alfalfa	8.00@11.00
Stock Hay	5.00@5.50
No. 1 Barley Straw	25 @ 40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.60 @ 1.62 1/2
Barley Feed	1.17 1/2 @ 1.20
Barley, Old Crop Feed	1.02 1/2 @ 1.05
Corn, Eastern Yellow	1.80 @ 1.82 1/2
Corn, Egyptian White	1.85 @ 1.90
Oats, Red, Feed	1.25 @ 1.35
Oats, White, Feed	1.42 1/2 @ 1.45
Millet	2 1/2 @ 3 1/4
Flaxseed	5 @ 5 1/2
Rye	2.00 @ 2.25
Sunflower	5 @ 5 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	15.00 @ 16.00
Bran, ton	27.50 @ 28.50
Feed Cornmeal	42.00 @ 42.50
Cracked Corn	42.00 @ 42.50
Roller Barley, ton	25.00 @ 26.00
Roller Oats, ton	37.00 @ 37.50
Middlings	32.00 @ 34.00
Shorts	28.50 @ 29.50
Oilcake Meal	37.50 @ 39.00
Cocoanut Meal	23.00 @ 24.00

Citrus Fruit Market

LOS ANGELES, September 1, 1915.

The orange market remains strong; there is slight indifference as to low quality stock, but all good fruit is commanding most satisfactory prices. There are yet to go about 1600 cars, and as there is fully ten weeks before new stock navels will be seeking market, these should be taken at satisfactory prices.

On the contrary lemons now promise to close the most disastrous season in many years. There is hardly a redeeming feature in the entire season's market. Some fruit is being shipped to factories for manufacture of citrate of lime; some of the best is being shipped; and some is not being picked at all. Many lemon growers will be compelled to wait another year before getting the cost of this year's orchard care.

Shipments

Shipments of oranges from Southern California to date, 31,299 cars, lemons 6105, total 37,404. To same date last season: oranges 36,535, lemons 2666, total 39,201. From Tulare County: oranges 5649, lemons 202, total 5851. To same date last season: oranges 5875, lemons 32, total 5907. From northern counties: oranges 630, lemons 2. To same date last season: oranges 404, lemons 5.

NEW YORK, Aug. 30.—Ten cars Valencia, four cars lemons, two mixed cars sold. The market unchanged on Valencia, lemons higher on best grades, unchanged on poor stock. Partly cloudy.

VALENCIAS—	Avg.
Old Mission, xl, Chapman	5.20
Old Mission, fy, Chapman	4.95
Golden Eagle, Chapman	4.60
Lady Rowena, Chapman	3.90
Orchard, National O. Co.	4.75
Standard, National O. Co.	4.15
Plain Ends	2.90
Aurora, Amer. Ft. Dis.	4.35
Mars, Amer. Ft. Dis.	4.55
Jupiter, Amer. Ft. Dis.	4.15
NAVELS—	Avg.
Caballero	32.50
Highland	1.45
VALENCIAS—HALVES—	Avg.
Charter Oak	22.10
Hesperides	1.75
LEMONS—	Avg.
Partridge	55
Old Baldy	30
Limoneira Co., Selected, vent.	2.70
Dan Patch	1.80
Pony	30
Dan Patch	2.25
Pony	1.80
Val Vista	1.25

Morning Star	1.05
Trall	1.75
Canyon	.50
Prairie Chicken	1.00
Commercial	.65

BOSTON, Aug. 30.—Eleven cars sold. Market is easier on both oranges and lemons.

VALENCIAS—	Avg.
Windermere, Windermere Ranch	4.40
Mars, Amer. Ft. Dis.	3.90
Jupiter, Amer. Ft. Dis.	3.75
Golden Flower, C. M. Brown	3.40
Assyrian, Pac. P. Co.	3.10
Martha Washington, Or. Ex.	4.40
Quality, S. T. Ex.	4.60
Campfire, S. T. Ex.	4.10
Cut and Try, S. T. Ex.	3.35
Boston, S. T. Ex.	4.55
Plymouth, S. T. Ex.	4.20
Anahelm Supreme, S. T. Ex.	5.70
Mother Colony, S. T. Ex.	4.45
LEMONS—	Avg.
Prong Horn, O. K. Ex.	1.00
Buck	.70
Whittier, S. T. Ex.	2.70
Pico	1.90
Greenleaf, S. T. Ex.	1.80
La Puente	1.00
Patlo, S. T. Ex.	1.55
Urchin	.95
GRAPEFRUIT—HALVES—	Avg.
Golden Flower	1.80

PITTSBURGH, Aug. 30.—Five cars sold. Market is better on oranges and lemons.

VALENCIAS—	Avg.
Cowboy, Or. Ex.	3.35
Iris, D. M. Ex.	4.50
Violet, D. M. Ex.	4.30
Jasmine, D. M. Ex.	4.00
LEMONS—	Avg.
Orion, F. C. Ex.	1.35
La Habra, S. T. Ex.	2.25
Reliable	1.75
Envoy, Q. C. Ex.	1.50
Maverick	1.40

ST. LOUIS, Aug. 30.—Two cars sold. Market steady on Valencia, weak on lemons.

VALENCIAS—	Avg.
Golden Beaver, Or. Ex.	4.05
Saddleback, Or. Ex.	4.05
LEMONS—	Avg.
As-You-Like-It, L. G. F. G. A.	1.05
Groves	.85
CINCINNATI, Aug. 30.—Three cars sold. Market steady on Valencia, weaker on lemons.	
VALENCIAS—	Avg.
Green Crown, A. C. G. Ex.	4.60
LEMONS—	Avg.
Arab, S. D. Ex.	.90
Pup	.70
Lemonade, Or. Ex.	1.20
Hillcrest	1.70

CLEVELAND, Aug. 30.—Three cars sold. Market steady on Valencia, lower on lemons.

VALENCIAS—	Avg.
Aurora, Amer. Ft. Dis.	4.85
Mars, Amer. Ft. Dis.	4.60
Jupiter, Amer. Ft. Dis.	4.30
Hector, Or. Ex.	4.80
LEMONS—	Avg.
Alamo, F. C. Ex.	1.00
Orion	.90

PHILADELPHIA, Aug. 30.—Six cars sold. Market lower on oranges and lemons.

VALENCIAS—	Avg.
Aurora, Amer. Ft. Dis.	4.45
Mars, Amer. Ft. Dis.	4.30
Jupiter, Amer. Ft. Dis.	3.85
Foothill Beauties, Or. Ex.	2.90
Golden Beaver, Or. Ex.	4.25
Saddleback, Or. Ex.	3.65
Carmencita, S. T. Ex.	4.00
Colombo, S. T. Ex.	3.10
Las Palmas, S. T. Ex.	2.85
LEMONS—	Avg.
Maduro, Q. C. Ex.	1.35
Grove	.95
Pico, S. T. Ex.	1.50
La Puente	1.00
Sunside, S. P.	1.25
California	1.05

CHICAGO, Aug. 30.—Some Pacific Slope pears are arriving in overripe condition and are slow at 1.25 for 50-pound boxes. Choice California Bartletts, 1.40@1.75; Washington, 1.35@1.50. Oranges, boxes, California Valencia, 4.50@5.00; off sizes, 3.50@4.25. Lemons, boxes, 300 to 360 count, 2.25@3.00. Cherries, Pacific Slope Lamberts, cases, 24 pints, 2.00@3.50. Casabas, California, cases, 5 and 6 melons, 1.10@1.25. Cantaloupes, standard cases, 45 melons, California, 2.25@2.50; pony crates, 1.65@1.75; flat cases, pink meats, 1.25@1.40. Plums, cases, 4 baskets, California Hungarian, Gross and Diamond, 90@1.00; Italian Giants, Kelsey and Yellow Egg, 75@85; cases, 24 quarts, Damson, 1.50@1.75; Shropshire, 75. Grapes, cases, 4 baskets, Tokay, 1.50@1.75; Malaga, 1.15@1.35; seedless, 1.10@1.25. Peaches, boxes, 20 pounds, California Elberta, 45@50; Crawford, 35@40. Pineapples, crates, Red Spanish, 1.25@2.25. Apples, best varieties, barrel, 2.25@2.50.

FARM BUREAUS

(Continued from Page 225)

ering these industries. Returns from the Orland farm center show 3390 hogs signed up for a swine growers' association and 2820 dairy animals have been signed for the dairymen's organization. Reports from other farm centers in the county have not yet been assembled though will be ready in due time.

Numbers demonstrations throughout the county with Sudan grass indicate the entire success of this plant as a field crop. Sudan grass under irri-

gation makes exceptional growth.

Through the activity of the farm bureau aided by Dr. Cady of the bureau of animal industry, and with the cooperation of Dr. Jensen, county livestock inspector, hog cholera has been brought under complete control in Glenn County at the present writing.

Since the organization of the county farm bureau, covering a period of twenty weeks, the Farm Adviser of Glenn County has made 346 calls on farmers, has held 59 meetings at which 4628 people were in attendance, and has carried on 57 field demonstrations on various farms in the county. The distance traveled has been 6003 miles. Aside from farm visits and demonstrations, county-wide movements for the control of storm water on farm lands, for the betterment of telephone and electrical power service to farmers, and for the formation of hog growers, and dairymen's organizations, have been successfully undertaken. In this work the farmers of the county have played a most important part.

GREAT POSSIBILITIES

The total area of California is approximately 100,000,000 acres. According to conservative estimates, based on the irrigation census of 1902, 2,000,000 of those acres are being watered at this time. This statement however does not convey a true idea of the relative importance of irrigation to agriculture in California. Only 14,000,000 acres, or about one-seventh of the total area, is valley agricultural land, so that the 2,000,000 acres irrigated comprise one-seventh of the irrigable land of the state. This estimate does not include the tillable upper mesas and mountain valleys, both of which contain large areas of irrigable land. Nearly one-quarter of all the irrigated land in the United States

is in California, and this state ranks first in the total number of irrigated farms and in the total construction cost of systems. The highest priced irrigated land in America is found in California, and in no other state has water for irrigation reached so high a value or been so carefully and so economically used. And in no other state is there so great an area of fertile farming land for which the available supply is so large.

Irrigation development, like any other, has followed the lines of most evident financial returns. So it is that the localities of least annual and summer rainfall were the first to be reclaimed by the use of water. The tide of irrigation, however, has been moving steadily northward, and, excepting in the mountainous sections and the sections of excessive rainfall, the necessity for irrigation, or at least the value of it where it is not a complete necessity, is almost universally recognized. While heretofore, then, irrigation has followed the line of most evident return, in the future it will follow the available water supply.

The supply in the larger streams as measured by the United States geological survey is given for the past four to six years as 45,160,000 acre-feet.

Leaving out of consideration the water supply available in the creeks and smaller rivers, 45,000,000 acre-feet of water is sufficient to cover the 14,000,000 acres of agricultural land in California to a depth of over 38 inches, which is ample for the growth of all crops. The vast quantity of water can never be entirely utilized in irrigation, because it cannot be fully controlled, but the statement of it shows the tremendous potentialities of California irrigated agriculture.

HAWLEY, KING & COMPANY

In referring in last week's issue to the retiring of Hawley, King & Company from the farm implement business, especially as to the connection of Mr. F. W. King with the company, we should have said that the firm of Hawley, King & Company will continue handling automobiles at 1027-33 South Olive street, Los Angeles. The concern will continue its agency for the Oakland, National and Saxon cars. We hope the record for good service made by this concern will be continued for many years.

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You get absolute satisfaction when you buy here; because our prices are so astonishingly low, our stock the very best obtainable, and our deliveries always prompt. We can furnish you with all kinds of building material. Never before were prices so low. Ours are positively rock bottom.

Look at these Prices

1x4" kiln-dried Good Pine Flooring	18 M
Fine Interior Finish, Oregon Pine, dry sand-ed slash, only	35 M
Star A, Redwood Shingles, only	1.50 M
Rough Oregon Pine, 2x3, 2x4, 2x6, etc., good, sound quality	14 M
1x10, 1x12, 14 M; surfaced one side	15 M
3/4x4" Ceiling selling at an unusual price	12 M

GOOD COLONIAL DOORS Oregon pine, 5-panel \$1.20 Screen doors, only \$1.35 Sash, one light \$40c up Windows, double hung \$55c up

FINE, DURABLE ROOFING PAPER Heavy Double Sand-ed. Nails and Cement included 75c sq. Extra Heavy Sand-ed. Nails and Cement included \$1.25 sq.

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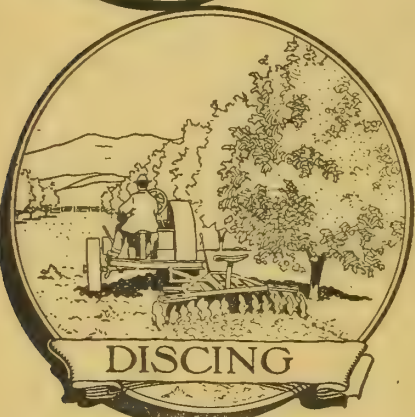
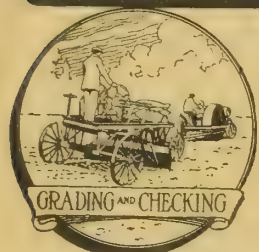
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An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

September 9, 1915

SAN FRANCISCO

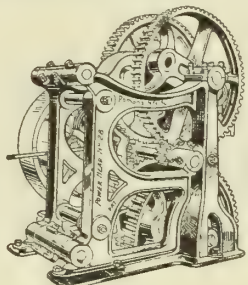


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Professor of Citriculture in the University of California, and Citriculturist to the University of California Agricultural Experiment Station. Formerly Superintendent in charge Citrus Experiment Station, Riverside, California.

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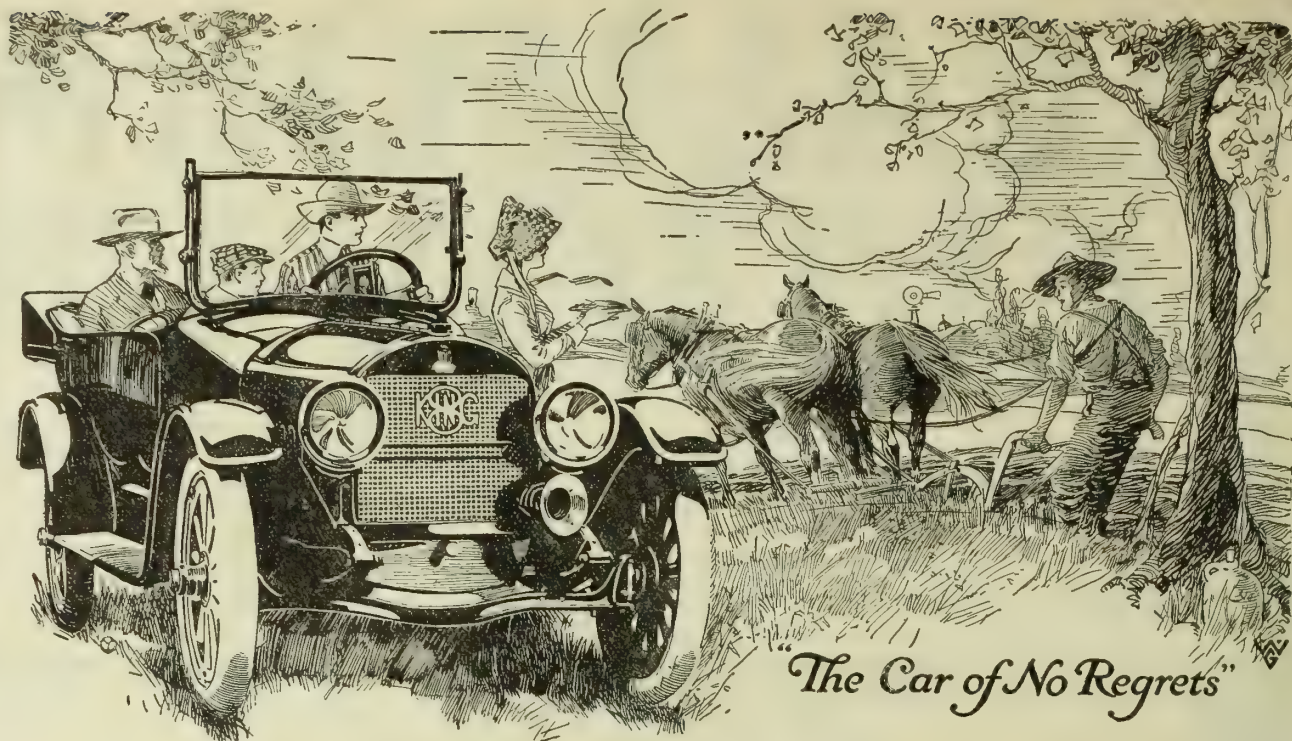
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Too Successful to Change this Year

The extraordinary demand for this pioneer Eight and its year's mechanical advance over all competition make it unnecessary for the King Company to stimulate sales by mid-year change of price or model.

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Therefore, the King Company announces this new policy for the protection of King owners and dealers: No change of price or model this year. No mid-year announcements. Either ample notice to dealers of any new announcement affecting prevailing model, or, rebate on all cars still unsold which were shipped thirty days prior to such announcement. No sacrifice of King quality for mere price reduction—but always a high grade car at a price that gives big value.

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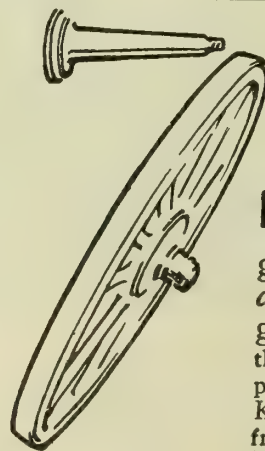
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(California)

Plant POTATOES Now for Fall Crop

The best results are obtained from planting seed of old crop. New crop seed potatoes will not produce a good stand. We have a fancy stock of last fall crop

White Rose Seed Potatoes

which have been kept in storage and are in excellent condition to plant.
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 11

LOS ANGELES: THURSDAY, SEPTEMBER 9, 1915

One Dollar Yearly

Cheese Making in the Santa Clara Valley

Dr. Leroy Anderson Writes of the Dairying and Cheese Making Industry in the State's Greatest Prune and General Fruit Growing Center

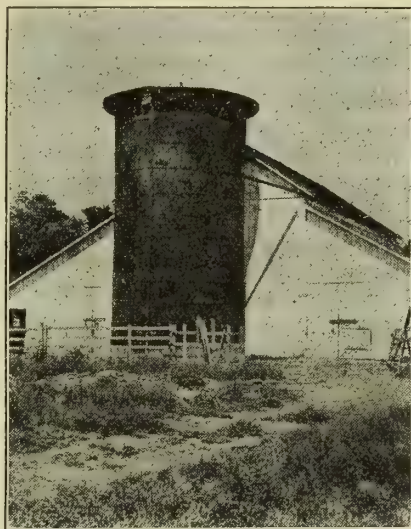
FARMERS in Santa Clara produce something beside prunes even though the prune is what has made the county famous the world over. In dairy circles the county is known as a cheese producer of first quality. As to quantity Santa Clara ranks among the first five counties in California. These counties stand something like this: Monterey, Sacramento, Marin, Santa Clara, San Benito, with Santa Clara having an annual production of about one-half million pounds. A comparatively small section of the county is devoted to cheese making, and that is located to the east and south of Gilroy. A drive of ten miles on the main highway leading southeast leads one by many cheese factories, and near San Felipe brings one to the boundary between Santa Clara and San Benito Counties. Thus the cheese sections of the two counties join closely, and more than one cheesemaker in San Benito County has his name in the Gilroy postoffice in the adjoining county, this because of rural delivery.

Soil, Water, Feed

The soil is some of the most productive in the state and reminds one of the Sacramento river bottoms or even in small portions of the Eel river lands of Humboldt. Most of the dairy lands are a creek sediment well adapted to growing alfalfa and corn and having an abundant supply of underground water with a small lift. Many wells are 80 to 100 feet deep with the water standing at 10 to 14 feet from the surface. At least one ranch enjoys an artesian well 400 feet deep and a flow of 500 to 600 gallons per minute. It is a joy to see such a flow without any expense for pumping.

The mainstays for feed are alfalfa and corn. Silos are common and usually of the stave type. Much land is leased by dairymen who may or may not provide the improvements. One beautiful piece of alfalfa is on a 69-acre tract leased for ten years at eight dollars per acre.

The lease began in 1910, and even now similar lands rent for two to five dollars an acre more. The tenant seeded the tract to alfalfa and put in an irrigation plant with a 90-foot well at his own expense. Practically all the dairymen use surface pipe for distributing water since the



Stave Silo, 17x32½

land is rather too uneven to level for checking.

One dairyman growing alfalfa and corn carries the two on a more or less regular rotation. Each year a few acres of alfalfa are plowed up and planted to corn and kept in the latter crop for two years when alfalfa is again seeded. He states that his alfalfa does not stand as long as formerly. His original seedings lasted for ten to 12 years while now the life of the alfalfa is about half that. An abundance of stable manure is put on when corn is planted.

Cheese Factories, Private and Cooperative

The size of factories ranges from the private dairy of 50 cows to one making up 8,000 to 10,000 pounds of milk daily. The dairyman milking 50 cows declared it to be profitable to make the cheese in his own plant. He is leasing the property on which he is working, and all build-

ings were provided in addition to the artesian well mentioned above. He employs two men to care for the cows and make the cheese. Each man milks half the cows and one makes the cheese as his special work, while the other feeds the cows. The cheese maker receives a monthly wage of \$50 and the other man \$40, both in addition to board. The daily output of cheese is five "flats" or 100 to 110 pounds and is of the half cheddar variety.

Probably the largest factory in the district receives milk from fifteen patrons. The owner of the factory has a dairy of 95 milking cows. The amount of milk received on August 13 was 8500 pounds and the biggest day this season was 9200 pounds. This is enough for about 40 "flats" of the stirred curd variety. Two men are employed. The method of paying for milk is rather unique. Patrons are paid for each 100 pounds of milk ten times the price of cheese, less 15 cents to cover the cost of making. Thus with cheese at 14 cents the price per 100 pounds milk would be \$1.40 less 15 cents, or \$1.25 net.

At another factory having at present six patrons, the milk is paid for on the fat basis. A composite sample is taken of each day's supply and tested weekly. Patrons are paid once a month. From the month's receipts a charge of \$1.40 per 100 pounds of cheese is first deducted to cover cost of making. The remainder is then divided pro rata upon the basis of the amount of fat which each patron delivered, including the factory owner's dairy. The price paid for fat in the month of July was 29 cents. Although owned by an individual, the factory is thus operated on a cooperative basis.

The by-product in cheese making is whey. At the Gilroy factories each patron is entitled to his share proportioned upon the amount of milk delivered, and he takes it home to feed to pigs. If sweet it may also be fed to calves. The 50-cow dairyman mentioned above says he feeds

nothing else to his pigs except when finishing for market when he gives rolled barley. The pigs certainly looked well, including brood sows which when nursing a litter have nothing but whey. For these animals it is allowed to sour. For calves it is fed sweet, a portion being scalded in the morning to keep it sweet for evening feeding. It will be remembered that in making cheese the casein and fat are nearly all put into cheese, leaving the albumin and sugar in the whey. The average analysis of whey is: Water, 93 per cent, fat .35 per cent, casein and albumin .80 per cent, sugar 5.20 per cent, ash .65 per cent.

Varieties and Returns

A good deal is being written nowadays about the California cheesemaker making a cheese like the eastern cheddar. With the latter selling uniformly at 17 to 18 cents and California flats at 10 to 14, there seems to be some reason in the effort to change the California habit. Gilroy cheese men, however, do not look kindly upon any change in method for several reasons: (1) The low mark of 10 cents in May and June was struck because of an excess of production. The high mark in California cheese of 19 cents early in 1914, was because of small production. The high prices then caused the erection of new cheese factories and also caused several creameries to change from butter to cheese. Hence the overproduction which has followed and a corresponding low price. The same thing would happen if cheddar were made. (2) As one cheesemaker put it: "With my present method (half cheddar) I can get one pound of cheese from 9 to 9 1-2 pounds of milk, while with the full cheddar process it would take 10 to 10 1/2 pounds of cheese." Roughly, the returns from 100 pounds of milk would be 10 pounds of cheese for the cheddar as against 11 pounds by his present process. On the present market of 13 cents he receives a premium of one cent, or 14 cents. The comparison then on 100 pounds of milk is: California, 11 pounds at 14 cents, \$1.54; Cheddar, 10 pounds at 17 cents, \$1.70. He thinks the difference is not enough to warrant a change. (3) The California flat requires a less time in making. Usually it is in the press by noon. The cheddar requires two to three hours longer in making, which is a material advance in its cost. (4) Cheddar requires a much longer time

(Continued on Page 256)



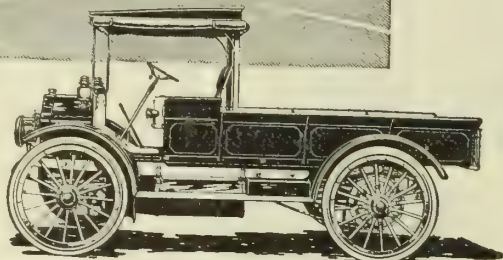
Privately owned cheese factory handling from 8000 to 10,000 pounds of milk daily.

The Holstein is the cow found on the cheese farms.

Two great fodders—alfalfa and corn. Corn, large yellow dent, planted latter part of May, photo taken August 15. The fence posts are four feet high.



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TIME is such an important factor in the marketing of fruit and vegetables, that any reasonable device for saving time receives earnest consideration. Perhaps the principal reason why International Motor Trucks are so popular among fruit and vegetable growers is because they save so much time on the road.

Around the larger cities truck farmers buy International Motor Trucks because their produce is on the road from one to three hours less time and is, therefore, delivered in such good condition that it commands the best prices.

Add to this advantage the ability to see customers first, which an International Motor Truck gives, and add again the saving of time on the return trip, and you have three good business-getting, money-making reasons for buying an International Motor Truck.

There are also other good reasons which every fruit and vegetable grower should know and which it costs nothing to find out. Drop us a line and we'll send you complete information about our three motor truck models, "M" for 1,000-lb. loads, "E" for 1,500-lb. loads, and "F," the new International 2,000-lb. truck.

International Harvester Company of America

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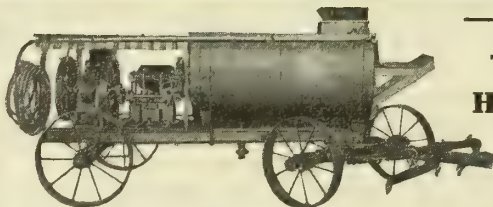
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321 Stimson Bldg., Los Angeles, Cal.

Exchange Report

Manager G. Harold Powell Presents Report for Work of the Year Ending September 1st.



THERE were shipped from California during the year ending August 31, 1915, 40,991 cars of oranges and 6667 cars of lemons, making a total of 47,658 cars. The exchange shippers forwarded 24,217 cars of oranges and 5565 cars of lemons, consisting of 9,640,977 boxes of oranges and 2,244,617 boxes of lemons. The returns f. o. b. California, estimating the few cars unsold, will be about \$19,537,850; the delivered value in the markets is approximately \$30,000,000.

The Proportion of the Exchange Shipments

The exchange shipped 62½ per cent of the total shipments, representing the largest volume as well as the largest proportion of the total crop ever handled. There has been a gradual increase in the proportion of the total shipments handled by the exchange since its organization. Ten years ago our growers forwarded 47 per cent, five years ago 59 per cent, and three years ago 60 per cent of the total crop.

Cost of Exchange Service

Our shippers paid approximately four and one-fourth cents per packed box to distribute and sell the crop to 2500 jobbers in the United States, Canada and other foreign countries, or one and two-thirds per cent of the delivered value of the fruit. They paid approximately two cents per box or less than eight-tenths of one per cent additional for national advertising to increase the consumption of citrus fruits, to popularize the Sunkist brand, and to bring the shippers into closer working relations with the jobbers and retail dealers. In passing it may be interesting to note that national advertisers of food products often expend 10 per cent or more of the value of the product for advertising purposes. The total cost of distribution, marketing, advertising, and dealer-promotion work, including the general service furnished the shippers by the central office, averaged six and one-fourth cents per box or 2-46/100 per cent of the delivered value of the fruit. The average cost of the district exchange is 91/100 of 1 cent per box, making the total average cost of the exchange and district exchange service, including the cost of advertising, 7-16/100 cents per box. The exchange service which is an evolution of 20 years of experience is not only less expensive, it is more comprehensive than any other crop-marketing service yet developed.

Central Office

The exchange service embraces the central office, including the salaries of an average of 55 employees, the general manager, assistant general manager, sales agents, attorneys, traffic manager, field manager, cashier, and the assistants and clerical help. The services of these employees cost our shippers approximately 69/100 of one cent per box. The rental of the general offices, the Citrus Protective League, and all other administrative and general expenses of the central office cost approximately 48/100 of one cent per box, or a total cost of 1-17/100 cents per box for salaries, rental and all other expenses of the central office.

Selling Agencies

There are 77 agencies in the principal

markets of the United States and Canada, which represent the exchange growers exclusively in selling their products to the fruit jobbers and in developing new customers and new markets. The cost of these agencies, including 180 agents, assistants and brokers, the rental of the offices and all other district agency expenses is approximately 2 41-100 cents per box. The balance of the operating expense, amounting to 67-100 of 1 cent per box, represents the cost of the daily telegraph, telephone and other market-news service, and other incidental expenses.

Eight to One Standard

The exchange provided at the beginning of the year that all oranges shipped under the Sunkist or other advertised brands should contain not less than eight parts of soluble solids to one part of acid in the juice. It supported the United States department of agriculture, which promulgated the standard, in giving the consumer good eating oranges at the beginning of the Washington Navel season. Unrestricted competition for the early market had resulted in the shipment of green, immature oranges in November and early in December. A few carloads of fruit brought high prices, but consumers turned away from our oranges to other fruits or oranges more appetizing. Practically all shippers in Tulare County, and in the other early districts, agreed voluntarily not to ship oranges that were below the 8 to 1 standard, and organized to enforce the regulation. No act in recent years has done more to popularize the California orange than the shipment of fruit at the beginning of the season that is acceptable to the

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Insure
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a treatise on the industry from seed to market, mailed for 25 cents in stamps.

San Dimas Citrus Nurseries
ESTABLISHED 1890
San Dimas, Cal. U.S.A.

trade and to the consumer. The early fruit shipped from the North was fine in color and good to eat. The trade pushed the sales with confidence. The consumer was pleased with the quality and there was a strong demand for Sunkist oranges. The shippers of the North deserve credit for the voluntary enforcement of this regulation. Those who knowingly ship oranges below the governmental standard and that are objectionable to the consumer should be severely condemned by the industry because of its adverse effect upon the interests of the grower.

Volume of Oranges and Grape Fruit in 1914-15

There was an increase of 19.1 per cent over the largest preceding season in the total volume of oranges and grape fruit shipped from December to February, inclusive, in 1914-15, from Florida and California, the average shipments from the two states equaling approximately 275 carloads per day during this period. This increase, in addition to 2,000 carloads from Louisiana and Porto Rico, had to be consumed in the face of the most disastrous business depression that affected both the American consumer and producer. It also had to compete with the largest crop of American and Canadian apples ever produced which sold throughout the winter at disastrously low prices.

Extreme cold weather prevailed early in December, which froze much of the fruit in transit and paralyzed the holiday trade. It gave the consumer inferior eating oranges soon after the season had opened so auspiciously and turned him to other fruits during one of the most desirable periods of the year. A similar severe cold period occurred in January, which still further interfered with the sale of fruit and damaged a large number of cars in transit.

The table following shows the number of carloads of oranges and grapefruit shipped from Florida and the oranges shipped from California from December, 1914, to August, 1915, inclusive:

Florida and California Shipments, 1914-15			
	Florida	California	Total
December	5170	4668	9838
January	3538	3197	6735
February	4157	4753	8910
March	3709	5852	9561
April	2656	6556	9212
May	1229	5666	6895
June	241	3097	3338
July	6	1362	1366
August		850	850

There was an increase of 33.8 per cent in the volume shipped in December, 1914, as compared with December, 1913, and an increase of 27.4 per cent in February as compared with February, 1914. This increase in volume, with the low retail prices that prevailed, increased the per capita consumption and affected the prices received during the latter part of the season.

Decay in California Oranges

The decay in California oranges, which was abnormally severe in February and March, cost the growers in some districts more than one-half the cost of producing every box shipped during the month of February, and the state from \$15,000 to \$50,000 per week. The decay was equally disastrous to the jobbers and retailers and for this reason many of them ceased handling California citrus fruits altogether. The large increase in the crop from Florida and California, the abnormally large apple crop, the damage to the fruit in transit in December and January, the excessive decay in

February and March, coupled with the universal depression in business resulted in low prices. This condition was common to practically all perishable fruits and vegetables, as a result of the chaos in international trade, all of the citrus-fruit producing countries of the world having been adversely affected. Private benefactions have been necessary in some countries, to keep the grower from starvation.

Effect of Publicity

In March, under better climatic conditions, the decay disappeared and market began to improve. This improvement was accelerated by the national publicity given Orange Day, March 20th. Orange Day was recognized by the Governor of California and by many of its leading institutions. It was given a national publicity at that time by publishers, railroads, express companies and other organizations. Through the cooperation of the Exchange with the publishers and with the trade, more than 250 pages of orange advertising ap-

peared in the newspapers on Orange Day. It was "bargain day" in oranges, supplies that had accumulated were cleared up and the markets thereafter readily absorbed the fresher, newer stocks. Comparatively satisfactory prices were received in April and May, and 26 per cent more oranges and grapefruit were consumed in April than in 1914. The almost universally low margins of the jobbers and retailers during the winter and spring months gave the consumer Navel oranges at reasonable prices and formed a greater orange eating habit than the people have ever acquired before. The better condition of the later market brought the average on all Navel oranges higher than the average of the previous year.

The Valencia Market

The effect of national advertising, coupled with a somewhat smaller crop than in 1914, has been a leading factor in making one of the most satisfactory Valencia seasons in recent years. Through national advertising

the Exchange is popularizing the Valencia with the American consumer. Investigation showed that the Eastern consumer believed that the Valencia is a winter orange taken out of cold storage. Few knew that California produced a summer orange of luscious eating quality. Through national advertising the consumer is realizing the healthful qualities of the California orange, the demand of the consumer for the Sunkist Valencia orange is increasing everywhere.

The trade has learned that the Valencia is comparatively free from decay; that it is the only summer fruit that can be handled without excessive loss; that it can be shipped into the country towns and to the mountains and seaside resorts. The good color and eating quality of the Valencia, and the freedom from decay, have combined to give the growers of the Sunkist Valencias a splendid financial return.

(Continued Next Week)

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Sizes 30x3 1/2 and 30x3

We are this year giving special attention to users of small-size tires. There are about a million of them. And the tire we build would win them all if all of them could know about it.

\$317,000 Added

This year we are building these tires larger than ever. We've increased the air capacity by 20 per cent. Added size means added mileage, as every user knows.

We have added 30 per cent to the rubber in the side walls just above the bead. That's where constant bending taxes tire walls most. And where thin-walled tires often chafe and break.

We have made new molds to improve the tire's design. For we have found a new shape which increases endurance.

These three additions will add to our tire cost \$317,000 this year. Yet this year we made another big price reduction—our third in two years, totaling 45 per cent.

Four-Ply Tires

Even the smallest Goodyear Automobile Tires

are four-ply tires—even size 30x3. And our anti-skid tread—the Goodyear All-Weather—is double-thick on all.

So Goodyears have always been exceptional tires. They won on sheer merit the top place in Tiredom, and for years have outsold any other.

Now we add 20 per cent to the air capacity and 30 per cent to the rubber above the bead. And we give you a better design. We are building by far the most capable tires ever built in these small sizes.

So even the occasional mishap and misuse will find new strength to combat them.

Get These Extras

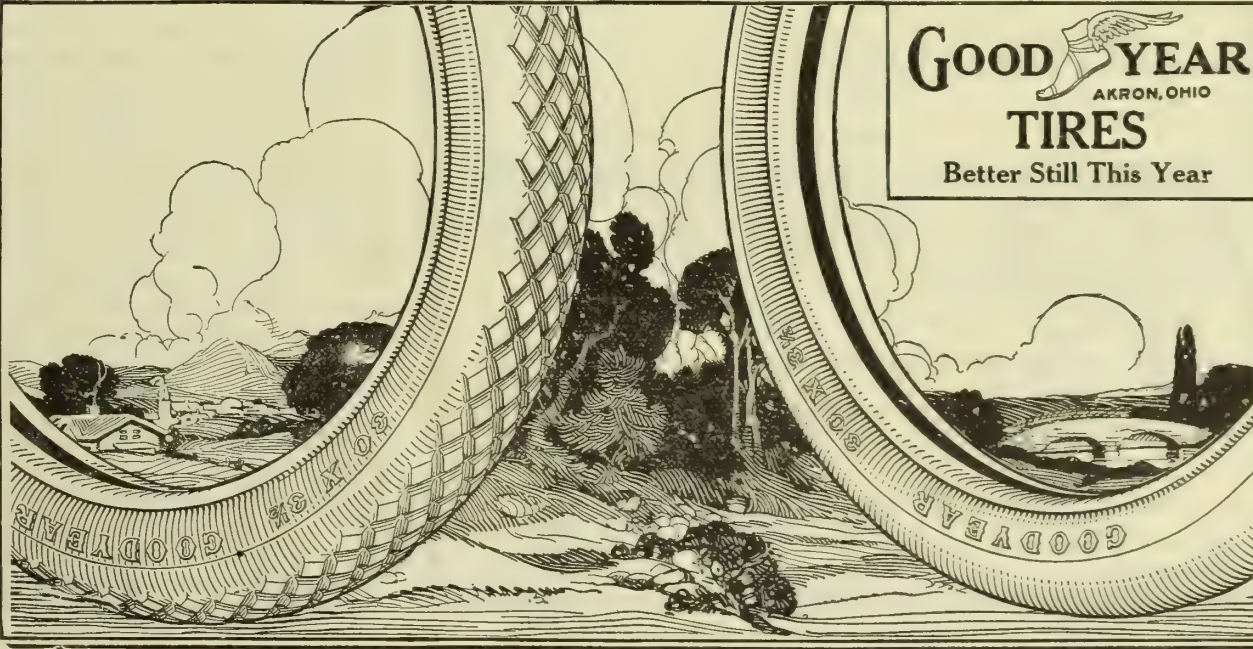
The value we give in Goodyear tires is due to our mammoth output. Get that value—it is due you. Smaller, thinner, lighter tires can't serve as Goodyears do. Even last year's Goodyears, though the leading tires, could not compare with these.

Any Goodyear dealer will supply you. Every neighborhood has a Goodyear Service Station with your size in stock, and it renders full Goodyear Service.

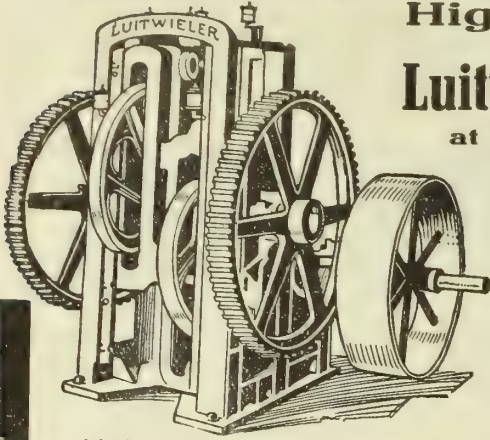
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THE PRUNE SITUATION



SANTA CLARA COUNTY'S prune growers' committee of which J. H. Bone is chairman and H. O. H. Shelly, secretary, met in the chamber of commerce in San Jose, Saturday, August 28, to collate statistics as to the 1915 prune crop. Regarding the report the San Jose Mercury says:

Some 25 orchardmen, representing practically every portion of Santa Clara County, were in attendance. Written reports were received from F. C. Wilson of Sunnyvale; Fred Millard, Valley View; D. M. Utter, Union; H. A. Clark, Saratoga, and Emil Neilson, Doyle. Aside from these there were a number of telephone reports from points in Santa Clara County and from other counties in the prune growing district.

It can be conservatively estimated that an actual report of more than 80 per cent of present actual conditions are at hand.

After a careful tabulation of the reports from every section of the prune growing belt the meeting prepared and gave out for publication and distribution:

"Since the prune harvest commenced the feeling has been growing that the crop is falling far short of what it was estimated at the time of the mass meeting in May. At Saturday, August 28, 1915, meeting a full report was made by from 18 to 20 different growers from all parts of Santa Clara County. Only three of these reports estimated the 1915 crops to be as large a crop as was estimated early in the season. One-half of the reports stated that the crop would be 25 per cent less than previous estimates, other reports putting this year's shortage from 10 to 20 per cent.

"A careful personal canvass by a member from one of the best districts gave the following figures: "Of 30 growers interviewed, having 804 acres of prunes, the 1914 crop was 1702 green tons. The early estimate of the 1915 crop was 2038 green tons. The present outlook is for 1755 green tons, a shortage of 14 per cent from early estimates.

"At present packers are offering a 4-cent basis or better for 'first picking' prunes as they come from the trays, but are having very little success in obtaining any quantity at these figures.

"The growers as a whole are standing firm on the idea that the 5-cent base is the least price at which any general sale should be made.

"As all growers are aware, the first picking is the poorest quality of the season, and, as one of the largest growers in the valley remarked to a committee member, 'If the packers pay 4 cents for such stuff, this is equivalent to the good fruit being at a 5-cent base.'

"This low grade stuff that the packers are now buying is going out to fill the spot market for immediate use and by no manner of means sets a market price for the main crop or in any way lessens the probability of the main crop reaching a 5-cent base to the grower who has backbone enough

to demand and hold for 5 cents in the face of the evident shortage.

"Direct reports from Sonoma, Napa, Contra Costa and Tulare Counties indicate that these districts are falling far short of packers' estimates and that a large proportion of the growers are holding, as we are, for the 5-cent base.

"The situation now appears to be so far in the hands of the growers that it only remains for them to remember similar previous occasions on which their fruit has been sold by the packers while in blossom on the basis of an enormous crop prospect, and when harvest came and the tonnage shrank the price rose in proportion.

"We again call attention of the growers to the way in which the price of dried apricots rose after harvest. This in spite of packers stating that it would be practically impossible to sell them at all.

"Also we call attention to the fact that no matter how great the shortage no buyer will raise his offer to the growers unless the spirit of the growers is such as demands and necessitates it."

GRAPE OUTLOOK

The state board of viticultural commissioners is sending out Bulletin No. 5 with a review of conditions in various counties. It appears that the crop will run about 60 to 70 per cent of normal. A few counties will run lower than this. For instance Yolo is referred to as having a very poor crop, mildew is noticed; Sacramento, half of crop, Sonoma not to exceed half of normal, Santa Clara, San Joaquin and others about 60 per cent; Napa County 80 to 85 per cent; Contra Costa County 75, Mendocino, Los Angeles, San Bernardino, Stanislaus and others 75 to 80 per cent.

We quote in full the report regarding vineyard conditions in Fresno County:

"It is said by many that in the last 20 years the vineyards in the San Joaquin Valley have never looked better than this year. If weather conditions the rest of the season are favorable the raisin crop will be considerably more than the average, especially the Muscat variety. Thompson Seedless and Sultanas will not exceed last year's production to any great extent. The raisin interests are fearful lest the growers may not exercise necessary care in the selection of the pack. A big percentage of the raisin-grape crop always goes to the wineries, but this year the sweet-wine wineries are so pressed by the exorbitant federal tax that they are not able to handle culls and second-crop grapes because of the tax money involved in their manufacture into brandy for fortification of sweet wine. The tax this year is 18 times greater than it has ever been and the failure of the wineries to handle the culls will necessarily prompt the grower to dry grapes that are not fit for the market as standard raisins. To pursue this practice might demoralize the raisin market and growers and packers should be cautious. It would be preferable to submit to entire loss of the second-crop grapes and culls than to spoil a season's pack by using a percentage of inferior fruit. The same advice would

apply to the shippers of table grapes who are also hampered in the disposition of their second-crop grapes by the federal tax on fortifying brandy.

"Some of the varieties of wine grapes are short by from 25 to 50 per cent, but other varieties show a good crop. The Malaga crop is short but as a whole the grape production in the San Joaquin Valley in the southern section will be larger than the average. The late and continued rains that came the first four months of the year without excessive hot weather, caused a development above the average in the southern section, while it caused a shortage in the northern districts by the rapid development of mildew and faulty setting of the fruit at blooming time.

"From another source in Fresno County the opinion is ventured that the Muscat grape will yield an average crop as will also the Thompsons, Sultanas and possibly Zinfandels. Feher Szagos will yield about 60 per cent,

RED SPIDER TROUBLES

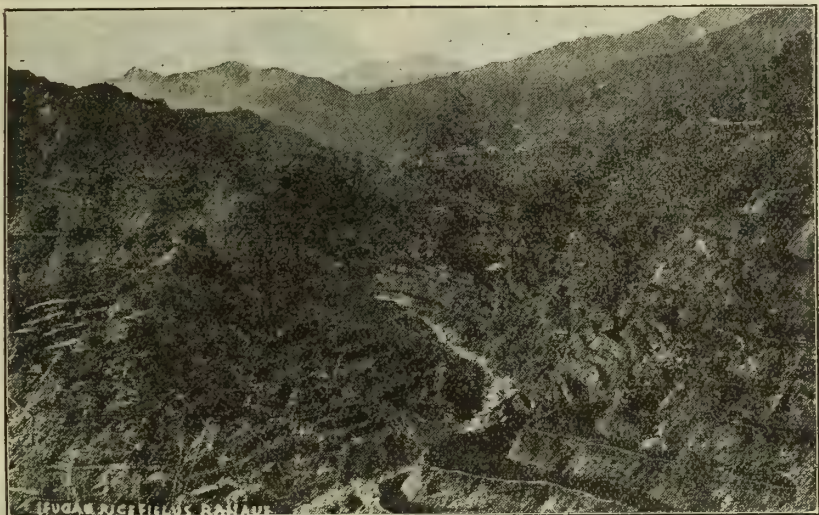
Written for the California Cultivator
By Sacramento Valley Contributor

Red spider is causing a great deal of damage again this year on prunes, almonds and other trees and is a serious pest in some nurseries.

It is being combated with sulphur in various forms, principally atomic sulphur as a spray; flowers of sulphur and flour paste as a spray; and fine sulphur dusted on the trees either through a coarse grain sack or with a power blower.

When an orchard infested with red spider is neglected it soon makes a very sorry showing, and there are many young and old orchards in the Sacramento Valley that now have almost no leaves, the growth for the season is stopped and they are very liable to sunburn.

Red spiders are thick not only on the trees in some orchards but on the alfalfa that is planted between the



RICE FIELDS OF LUZON, PHILIPPINE ISLANDS

A subscriber, Mr. Artemas R. Kratz of Bangued, Philippine Islands, sends us this photo showing methods of rice cultivation in Northern Luzon. Rice culture in California is attracting much interest but we doubt not it will be many years before intensive cultivation will necessitate its culture in terraces up on the hillsides as has been done in the Philippines.

and other wine grapes about 80 per cent of a normal crop. Feher Szagos suffered from climatic conditions during the blooming season and other wine grapes have suffered somewhat from a hot spell in July."

The viticultural commission expects to issue these reports some three or four times during the season.

Regarding the shipping of fresh grapes in sawdust the board says: "Table grape growers of the state who may be contemplating putting up a portion of their pack in kegs with the use of redwood sawdust as a preservative may be interested in knowing that the cost of the package, the sawdust and the labor is about 90 cents per keg. Freight and refrigeration to Chicago amounts to 71 cents per keg. Last year some of the grapes packed in this form sold as high as \$2.50 per keg F. O. B. California. This price, however, was subject to considerable fluctuation and where the grapes were consigned they brought various prices according to their condition when the keg was opened.

"The keg contains about 35 pounds of grapes, and the mode of distribution has been largely through commission merchants and the agencies established in the East by the large fruit shipping concerns of California. Although a great quantity of table grapes was packed in this fashion last year, the distribution by this means may still be considered to be in an experimental stage.

rows, corn planted in the same way, on roadside weeds, and on the oaks, willows and native shrubs in the areas around the orchards.

In order to keep the spiders in check it is necessary this year to keep everlastingly at the spraying job; they seem to multiply over night, almost, and as soon as the spraying is completed on a block it has been necessary in some cases to double right back and do it over again.

A thorough spraying with a good oil spray in the winter is to be tried in some orchards in an effort to kill many of the over-wintering eggs.

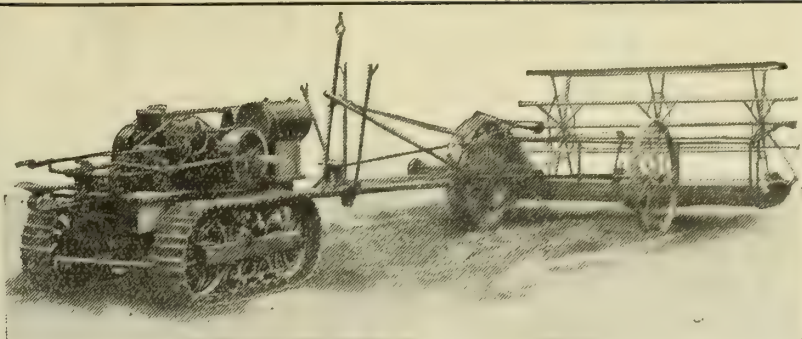
APPLE PRICES IN THE NORTHWEST

The sales manager of the Spokane Fruit Growers' Company, a member of the Northwest Shippers' League, reports the following as the opening prices of apples:

Jonathan, fancy, \$1.05; extra fancy, \$1.25; Grimes Golden, 95c@1.15; Stayman Winesaps, \$1.00@1.15; Spitzenburgs, \$1.50@1.85; Delicious, \$1.25@1.75; Winter Bananas, \$1.50@2.00; Arkansas Blacks, \$1.50@1.75; Rome Beauties, \$1.20@1.35; Black Den Davis, \$1.00@1.25; Ganos, \$1.00@1.20; Wageneers, \$1.00@1.25; Black Twigs, \$1.00@1.15; Ben Davis, 95c@1.15; Winesaps, \$1.30@1.50.

These prices are under those of 1913 but much better than those of last year. The manager writes:

"In today's mail we received two requests for quotations, one dealer asking for prices on 70 cars of Spokane apples and the other on 150 cars. The buyers are optimistic, but they are also conservative. We are now drafting our opening prices and they are substantially the figures given."



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- Frictional Loss in feet for 100 Feet—Clean Iron Pipes
- Table of Theoretical Horse Power Required to Raise Water at Different Heights
- Convenient Equivalents
- How to Make a Weir
- How to Determine Mesh of Strainer to Use
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Farm Bureaus



THE wonderful agricultural resources in northern Arizona are much less developed than those of southern Arizona. The University of Arizona agricultural extension service is maturing plans whereby the farmers of northern Arizona will receive better service than ever before. Prof. Stanley F. Morse will make an extended trip through Yavapai, Coconino, Navajo and Apache Counties, according to the following schedule. In Navajo and Apache Counties he will endeavor to raise funds for putting in a farm adviser. Funds for this purpose have already been allotted by the United States department of agriculture, the University of Arizona and the Santa Fe Railroad Company, but the counties must appropriate at least 30 per cent of the total funds before a farm adviser will be stationed there. Prof. Morse's work in Yavapai and Coconino Counties will be to assist the farmers in organizing local associations for social, educational and commercial purposes. There are now 36 local farmers' organizations in Arizona.

Prof. G. W. Barnes will accompany Prof. Morse from Holbrook to Flagstaff to assist the farmers with their livestock problems. Prof. Barnes will select certain farmers as cooperating farm demonstrators to carry on demonstrations of profitable methods of handling range bulls, hogs and sheep under his personal direction. The balance of his schedule will be made public at an early date.

Phoenix, September 4.
St. Joseph, September 5, morning.
Snowflake, September 6, afternoon.
Taylor, September 6, evening.
Show Low, September 7, afternoon.
Lakeside, September 7, evening.
Springville, September 8, evening.
St. Johns, September 9, evening.
Woodruff, September 11, morning.
Flagstaff, September 11, evening.
Williams, September 12, morning.
Prescott, September 14, afternoon.
Phoenix, September 15-16.

Cochise and Santa Cruz Counties, Arizona, A. L. Paschall Adviser, San Simon

San Simon—September 4, 2 p. m., office of adviser; Guy B. Sisson, leader.

Portal post office, Rodeo, New Mexico—September 6, 2:30 p. m., Stuart's farm; Wm. A. Stuart, leader.

Rodeo, New Mexico—September 7, 10:30 a. m., Cooperative Store; Mr. Wiley, leader.

Apache—September 7, 1 p. m., Weber's Farm; John Weber, leader.

Chiricahua—September 7, 2:15 p. m., post office; J. B. Pettit, leader.

San Bernardino—September 7, 4 p. m., post office; Postmaster, leader. Farm visits from Slaughter's Ranch to Douglas.

Douglas—September 9, 10:30 a. m., Vanneman's Dairy; P. Adams, leader.

Douglas to Bisbee—September 9; farm visits.

Bisbee—September 10, 10 a. m., Warren's Ranch.

Hereford—September 10, 2:30 p. m., Pryor's Shop; J. H. Pryor, leader.

Garces—September 10, 7:30 p. m., farmers' meeting, schoolhouse, J. G. McCabe and R. M. Johnson, leaders.

Garces to Carr Canyon—September 11, farm visits.

Buena—September 11, 7:30 p. m., F. I. A., schoolhouse, J. P. Steele and C. R. Knoles, leaders.

Turner—September 13, 10 a. m., Gordon's farm; S. N. Gordon, leader.

Elgin—September 13, 2 p. m., F. E. Dalton's Farm; F. E. Dalton, leader.

Elgin—September 14, 2 p. m., J. G. Frazier's Farm; J. G. Frazier, leader.

Canille—September 15, 2 p. m., farmers' meeting, schoolhouse; W. E. Bower, leader.

San Rafael—September 16, 2:30 p. m.; R. N. Keater and Geo. Parker, leaders.

San Rafael to Patagonia—September 17, farm visits.

Sonoita—September 18, 2:30 p. m., F. I. A., schoolhouse; J. S. Gashwiler and Mark Manning, leaders.

Elgin—September 18, 7:30 p. m., Fruitland Hall; Chas. L. Wood, Isaac P. Frazier, Miss Carrie Swigart, leaders.

Elgin—September 20, 2 p. m., farmers' meeting, schoolhouse, Rain Valley; Chas. L. Wood, leader.

Tombstone—September 21, 2:30 p.

m., conference, court house; Miss Minnie Lintz, leader.

St. David—September 22, 2 p. m., farmers' meeting, church; W. G. Goodman and R. Boyle, leaders.

Benson—September 22, 7:30 p. m., F. I. A., Robinson's schoolhouse; A. H. Scott and J. R. Cosby, leaders.

Benson—September 23, 10 a. m., girls' club, Mrs. Proffitt's home; Mrs. J. T. Proffitt, leader.

Dragon—September 23, 4 p. m., E. G. Adams's Farm; E. G. Adams, leader.

Cochise—September 23, 7:30 p. m., F. I. A., schoolhouse; C. R. Fillerup and Mr. Larsen, leaders.

Cochise—September 23, 10:30 a. m., E. N. Smith's Farm; E. N. Smith leader.

Cochise—September 24, 3 p. m., Jenkins's Farm; W. M. Jenkins, leader.

Pearce—September 24, 7:30 p. m., F. I. A., Stronghold schoolhouse; R. Mears, leader.

Courtland—September 25, 10:30 a. m., Dillman's Farm; H. C. Dillman, leader.

Whitewater—September 25, 1:30 p. m., boys' and girls' clubs and group of farmers, Patterson's Farm; Thos. Patterson, leader.

Whitewater—September 25, 2:30 p. m., ladies' circle, Soldiers' Hole; 3 p. m., farmers' meeting, Hole S. H.; W. J. Shultz, leader.

McNeal—September 27, 10 a. m., Smith's truck farm; Mr. Smith, leader.

Bisbee—September 27, 2:30 p. m., farmers' meeting, I X Bar schoolhouse; F. H. Spaulding, leader.

McNeal—September 28, 10 a. m., Leslie Canyon schoolhouse; C. E. Sampson, leader.

Bisbee—September 28, 2 p. m., visit, McKeehan's Farm; Wallace McKeehan, leader.

Pirtleville—September 29, 10 a. m., Rucker Canyon schoolhouse; W. R. Rogers, leader.

Light—September 29, 3 p. m.; Robert Jordan, leader.

Willcox—September 30, 2:30 p. m., farmers' meeting, Kansas schoolhouse, J. S. Miller, leader.

Willcox—October 1, 2:30 p. m., farmers' meeting, schoolhouse or farm; A. L. Cropper, leader.

Willcox—October 2, 19 a. m., Carnahan's farm; Mr. Carnahan, leader.

McAlister—October 2, 7:30 p. m., F. I. A., schoolhouse; W. A. McAlister, leader.

San Simon, October 4-9.

San Simon—October 9, 2 p. m., F. I. A., office of farm adviser; Guy B. Sisson.

A convention of representatives of the farmers of Cochise and Santa Cruz Counties met at Douglas August 27 and 28 and organized the Cochise-Santa Cruz County Farm Improvement Association. The next meeting of the association to perfect its organization by adopting a constitution and by-laws and electing permanent officers will be held at Cochise on Saturday, September 18, at 3:30 p. m.

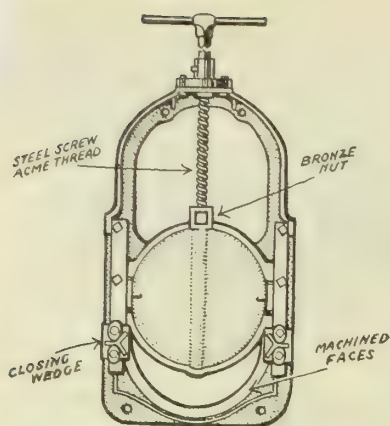
Saturday, August 28, was devoted to a motorcade on which the farmers visited eight ranches within about 30 miles of Douglas belonging to Dr. A. W. Vanneman, Mrs. W. Hatche, Applewhite Investment Co., Messrs. Shepard, Smith, Patterson, Schultz and Kuntz. Three pit silos, several concrete caisson wells, two boys' corn club plats, and several orchards and gardens were inspected. The valuable feature of the ranches visited were pointed out by the four farming experts who accompanied the party. Several of the visiting farmers said that they were going to construct pit silos in the near future, and all were interested in seeing some Sacaton June corn grown from pedigreed seed distributed by the University of Arizona agricultural extension service.

Maricopa County, Arizona, J. A. Armstrong, Adviser, Phoenix

Land outside the Roosevelt Dam project which has been receiving water on a rental basis may still secure this service up to sometime in December. To the man who is on the job this is long enough to enable him to make another crop. Land that is deeply plowed and irrigated with 12 to 20 inches of water and harrowed from time to time will carry a crop of wheat or barley through any amount of dry weather and make a satisfactory crop.

Chandler Farmers' Union has passed resolutions asking that a local

(Continued on Page 263)



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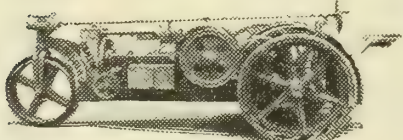


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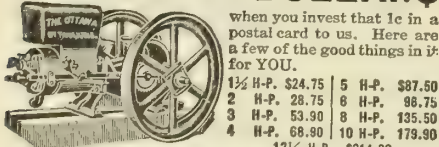
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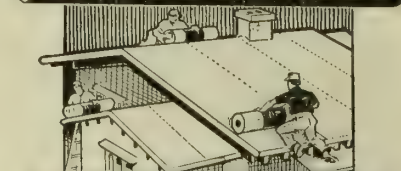
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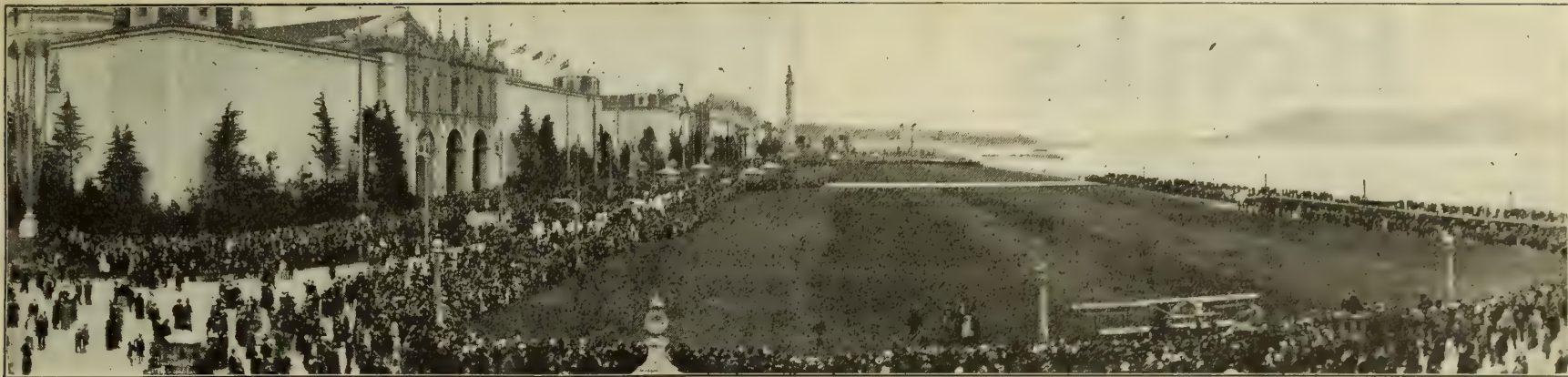
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ON THE MARINA AT THE EXPOSITION JUST BEFORE THE ASCENT OF THE AVIATOR

LIVE STOCK AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION

Editorial Correspondence

ALMOST, if not quite all, healthy, normal people are interested in live stock. Many may not know very much about it from a strictly technical viewpoint, but they like to see good animals.

This is shown by the attendance at the live stock division of the Panama-Pacific International Exposition this summer.

To have a continuous show of live stock for several months is a big undertaking. The competitive shows of the breeds are for two week periods during the fall, that is, a two weeks horse show, followed by a two weeks cattle show and later a two weeks hog and sheep show.

Breeders generally cannot afford to keep herds on exhibition for a longer period at one show because of the expense, the inadvisability of keeping breeding animals in show form for a longer period, etc.

In order to have a show that would be an education to visitors at the fair during the entire year, and that the various breeds might have the benefit of the advertising, D. O. Lively, chief of the live stock division of the exposition, planned to permit the breed associations to maintain herds of representative animals on exhibition continuously.

This was a great opportunity but it was taken advantage of by but a few organizations and some progressive breeders, so that while not as complete as it should be, there are many splendid individuals in the "all year" show, and thousands of visitors visit the barns.

The Carnation Stock Farms of Seattle, Washington, and Oconomowoc, Wisconsin, have had a herd of splendid Holstein cows on exhibition in one of the dairy barns. These are kept, cared for and fed in the most approved manner and milked with a calf way milking machine. This is a very interesting operation to many dairymen and to hundreds of city people.

In August a splendid herd of very high class Guernsey cattle was put on exhibition by W. H. Dupee, of Santee, making a show that will do the Guernsey breed a great deal of good on the coast.

There are many splendid animals in the horse barns, and Easton & Ward have a wonderful show of sires from the Blackhawk Stock Farm at Burlingame. The California bred horses they are showing demonstrate the fact that no better Shires can be produced anywhere than here.

H. Thornberry of Stockton shows a number of gaited saddle horses; and the Hopland Stock Farm, Hopland, a band of splendid Hungarian ponies.

Mrs. Anita Baldwin has a sensation-

al display of Percheron and Arabian horses from her stock farm at Santa Anita, and Durham & McLaughlin of Oakland are showing a number of good Percheron stallions.

The American Berkshire Swine Breeders' Association of Springfield, Illinois, has shown itself to be the most progressive breed organization in the country as far as this view herd proposition is concerned. It is the one breeders' association that has maintained a show during the entire fair. A good lot of hogs have been on display continuously and the herd has been in charge of a representative of the association who has explained the merits of this excellent breed to thousands of interested visitors. Many sales of hogs have been made and the Berkshire Breeders' Association has received benefits many times greater than the cost of this display.

Had it not been for the quarantine in connection with the foot and mouth disease situation in the East other breed associations would undoubtedly have maintained display herds, but in view of the fact that good representatives of almost all of the breeds could have been secured on the coast makes this rather a poor excuse.

During August a show of Shorthorns was made by the American Shorthorn Breeders' Association.

The decorations in the horse barns are the most elaborate ever seen at a fair or stock show. Over \$2000 was spent in decorating one barn. In addition to painting, bunting, lattice work, etc., a great many beautiful potted plants and trees have been used.

There is a good show of poultry that is of great benefit to that industry on the coast.

And it is very fitting that in connection with a California live stock show there should be a number of silos on exhibit. There are stave silos shown by three different firms, one reinforced concrete silo and one metal silo.

While there is much to interest the lover of live stock at the fair now, plans should be made to attend the big stock shows during October and November.

SWINE BREEDERS

Secretary Thompson of the California Swine Breeders' Association is writing to members asking as to the advisability of a banquet and reception to be held in connection with the meeting of the National Swine Growers' Association, which meets in San Francisco November 4. The meeting will be held in connection with the swine exhibit at the exposition. Secretary Thompson is also asking as to the advisability of the California Swine Breeders' Association supervising a consignment auction sale and wishes all the members to write him as to their ideas and how many hogs will be furnished if such sale is pulled off.

This is a great month for conventions and congresses. There are to be 82 international and state congresses.

Many Types of
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Centrifugal Pumps
in operation
Palace of Horticulture
Adjoining Cuban Gardens, which
are under the Big Glass Dome.
Bean Spray Pump Co.
San Jose, Cal.

GOOD ROADS

The entire week of September 13-18 will be required to give proper discussion of good roads by the Good Roads Congress. There will be delegates from all sections of the United States and even other countries of both North and South America.

The Eucalyptus Hardwood Association of California is in session this week.

Friday, September 10, is El Dorado County day.

Saturday of this week is Butte County Day.

Monday, September 13, will be Tri-State Good Roads Association Day, also San Luis Obispo Day.

Thursday, September 16, is Farmers' Day, also Pacific Highway Day.

All exhibition palaces are open until 6 o'clock.



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IRRIGATION CONGRESS

Of greatest interest to Pacific Coast people for next week will be the International Irrigation Congress, which will require seven days of discussion. This great organization has accomplished much for semi-arid America. There will be delegates from many foreign countries.

Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

	Book Alone.	With Cultivator.	Free for the following number of new Subscribers.
American Grape Growing, by Hussman.....	\$ 1.50	\$ 2.25	3
American Peach Orchard, by Waugh.....	1.00	1.85	2
Arid Agriculture, by Buffum.....	1.50	2.35	3
Book of Alfalfa, by Coburn.....	2.00	2.75	4
California Soils, by Prof. Gilbert E. Bailey.....	1.50	2.20	3
Cement Worker's Handbook.....	.50	1.30	1
Citrus Fruits, by Coit (new).....	2.00	2.75	4
Cooperation in Agriculture, by Powell.....	1.50	2.40	3
Domestic Water Supplies on the Farm, Fuller.....	1.50	2.30	3
Date Growing, by Popenoe.....	2.16	2.85	4
Feeds and Feeding, by Henry.....	2.25	3.00	5
Farm and Garden Rule Book, by Bailey.....	2.17	2.90	4
Farm Animals, Hunt and Burkett.....	1.50	2.35	3
Farm Sewage, by Santee.....	.50	1.40	1
Field Manual for Sugar Beet Growers, Adams.....	1.00	1.85	2
Fruit Growing in Arid Regions, by Paddock.....	1.50	2.40	3
Farm Manures, by Thorne.....	1.50	2.25	3
Farm Friends and Farm Foes.....	.90	1.85	2
Farmers of Forty Centuries, by King.....	2.15	2.95	4
Fertilizers, by Vorhees.....	1.25	2.15	3
Fertilizers and Crops, by Van Slyke.....	2.50	3.35	5
Fertilizers, Source, Purchase and Use, by Smith.....	1.00	1.90	2
Fungous Diseases of Plants, by Duggar.....	2.40	3.25	5
Garden Helps, by Hall.....	.75	1.65	2
Gasoline Engine on the Farm, by Putnam.....	2.00	2.60	4
Gardening in California, Landscape and Flower by McLaren.....	3.75	4.50	7
Garden Book of California (Ornamental), by Angier.....	2.00	2.85	4
How to Keep Farm Accounts.....	1.00	1.75	2
Hand Book for Farmers and Dairymen, by Woll.....	1.50	2.30	3
Harpers Gasoline Engine Book.....	1.00	1.80	2
Irrigation and Drainage, by King.....	1.50	2.40	3
Intensive Farming.....	.75	1.60	2
Insecticides, Fungicides and Weed-killers by Bourcart.....	4.50	5.00	9
Insect Pests of Farm, Garden and Orchard, by Sanderson.....	3.00	3.85	6
Lessons in Cooking Thro Preparation of Meals.....	2.00	2.85	4
Modern Gasoline Automobile, by Page.....	2.50	3.10	5
Making the Farm Pay, by Bowsfield.....	1.15	1.95	2
Management and Feeding of Sheep.....	2.00	2.75	4
Marketing and Farm Credits.....	1.00	1.50	2
Milk and Its Products, by Wing.....	1.50	2.40	3
Nursery Book, by Bailey.....	1.50	2.40	3
Principles of Breeding, by Davenport.....	3.00	3.75	6
Practical Garden Book, by Bailey and Hunn.....	1.00	1.90	2
Productive Feeding of Farm Animals, by Woll (new).....	1.50	2.35	3
Primer of Irrigation, Anderson (paper cover)....	1.00	1.85	2
Potato Book, by Grubb.....	2.20	2.70	4
Pruning Book, by Bailey.....	1.50	2.40	3
Play and Recreation, by Curtis.....	1.25	2.05	3
Rural Improvement, by Waugh.....	1.25	2.05	3
Standard Encyclopedia of Horticulture, by Bailey (new) 6 volumes.....	36.00	36.50	72
Story of the Soil, by Hopkins.....	1.50	2.35	3
Soil Mangement, by King.....	1.50	2.35	3
Soils, by Hilgard.....	4.00	4.75	8
Swine in America, by Coburn.....	2.50	3.25	5
Science and Practice of Cheese Making.....	1.75	2.50	4
Soil Fertility and Permanent Agriculture, by Hopkins.....	2.70	3.50	6
Traction Farming and Traction Engineering.....	1.65	2.25	3
Types and Breeds of Farm Animals.....	2.40	3.25	5
Young Farmer, by Hunt.....	1.50	2.35	3

POULTRY, ETC.

Built and Used by Poultrymen (excellent).....	.50	1.25	1
Belgian Hare Guide.....	.25	1.20	1
Ducks and Geese.....	.75	1.65	2
Leghorns, All Varieties.....	1.00	1.85	2
Minorcas—Every Comb and Color.....	.50	1.45	1
Poultry for Profit, by Koethen (new, excellent).....	1.00	1.75	2
Perfect Poultry of America.....	2.50	3.00	5
Poultry Houses and Fixtures.....	.50	1.40	1
Pigeons—All About Them.....	1.00	1.90	2
Reliable Poultry Remedies.....	.25	1.20	1
Rhode Island Reds.....	.75	1.65	2
Turkeys.....	.75	1.65	2
Western Poultry Book, by Mrs. Basley.....	1.00	1.75	2

BEES

A B C and X Y Z of Bee Culture.....	2.00	2.85	4
Beekeeper's Guide, by Dr. Cook.....	1.20	2.00	3

We pay the postage. Books sent as premiums only when full number of new paid subscriptions accompany order. Upon request we will gladly quote price on any not included in this list. Send orders with remittance to

Cultivator Publishing Co.

115 No. Broadway, Los Angeles, Cal.

General Agriculture



DRILL CLOSELY



AS our grain been drilled too far apart to secure fullest returns from the land? Some have decided so and to that end a drill has been constructed with a three and one-half inch interval, leaving with its spread of seed less than three inches between the drills. This is practically broadcasting excepting it gives much better and more uniform covering of seed. We were given the name of one of Oregon's most successful farmers, Mr. C. D. Nairn, of Yamhill County, and from him we have a letter from which we take this data:

"Regarding the three and one-half inch drill will say it is a pleasure for me to write regarding this method

and I have secured better results with this broadcasting than with the old type of single drill. We have taken particular pains in the growing of oats from selected heads chosen from the choicest of large fields. Prior to securing this improved drill we have done this special work by opening a furrow with the hoe and seeding with the fingers. I consider this type of drill practically the same as broadcasting only that much better results are secured. When drilled in in this way harrowing is not necessary although a very light harrowing may possibly be beneficial.

"Our best yield was on clover sod plowed in early spring. The seedbed was prepared by clod mashing, followed by disking and springtooth har-



ADVANTAGE OF CLOSE DRILLING

Corner of a 50-acre field of Shadeland Eclipse oats on Shadeland Farms, and C. D. Nairn, owner. This grain was drilled very closely, leaving no chance for wild oats or other weeds. Yield 92½ bushels per acre.

which has so much real merit for I know it will be a benefit to many a farmer. This furrow drill is a great success. The first field of oats seeded with it yielded 92½ bushels per acre, nearly double that of any other field in our neighborhood. The stand of oats was so thick there was no possible chance for wild oats or other weeds to grow and the land was perfectly clear and free for the fall seeding of wheat. In addition, the oats so fully shaded the ground and protected the roots from the heat of the sun that much moisture was saved. On our ranch we are largely engaged in the growing of seed oats and we find that seed houses demand them not only true to name but free from wild oats or other weed seeds and this crop of seed oats just harvested, which was drilled in with this improved drill, is the finest seed we ever produced in our 30 years of experience in seed growing. Our oat-fields have been visited during the past season by many leading farmers and seed men who are watching results. Most of them are convinced as to the worth of the drill, both because of the increase in yield and the resulting pure seed. Many farmers in this section will seed oats with drills which will permit this satisfactory work. I have been an expert in seeding by hand, sowing with both hands and often seeding 40 acres per day and usually getting good crops,

rowed the reverse way, drag harrowed, then rolled, followed with the three and one-half inch disk shoe drill. From April 9 till the end of May I never saw oats grow so fast, even keeping pace with those seeded by hand in the trial plots and were harvested 10 days earlier than oats seeded by hand or with a disk drill. By way of testing I sowed a strip by hand and another by drilling in same field as those planted by the three and one-half inch drill and the results were most startling. I am safe in stating those seeded by the three and one-half inch drill yielded 50 per cent over any of the other methods stated and we are optimistic over this method of planting our fall wheat as our spring oat seeding has proved a great success."

POTATO MEN GROW CERTIFIED STOCK

"One hundred and sixty Wisconsin potato growers have made application to have their fields inspected, with a view to marketing their crops as certified seed," said J. G. Milward of the College of Agriculture of the State University. All potato sections of the state are represented in the 160 applications, a large number of which have come in as a result of the certified seed potatoes sold last year. At that time certificates were issued to 48 potato growers. A large number of these men advertised

their stock and sold their crops as certified seed at advanced prices. Other farmers, buying this seed, have been stimulated to also strive for high quality, and to put a certified product on the market.

SIXTH POTATO CONFERENCE

Sebastopol asks for a potato conference September 25. Two of Sonoma County's potato growers have entered the prize contest for the best acre of potatoes, and one of these elects to grow certified seed potatoes under the law passed by the last legislature at its late session.

The complete circuit of conferences with dates is as follows: Bakersfield, September 14; El Monte, September 16; Nuevo, near Perris, Riverside County, September 17; Salinas, September 20; Stockton, September 23; Sebastopol, September 25. There will be two sessions at each place, one at 10 a. m., the other at 2 p. m.

Addresses will be given in each case by the county commissioner who will be asked to preside, and also by a local potato grower who will give the history of potato growing in the locality. Mr. W. V. Shear of the United States department of agriculture, and the state horticultural commissioner will also deliver addresses.—A. J. Cook, State Commissioner of Horticulture.

ENFORCING SQUIRREL CONTROL

Written for California Cultivator
By L. B. Stanton

By an act of the legislature passed in 1909 and found on page 311 of statutes of that session it is made and declared to be the duty of every one owning, leasing, occupying, possessing or having charge of any land, place, building, etc., which is infested with rats, mice, gophers or ground squirrels, as soon as the presence of same shall come to the knowledge of such person to at once proceed in good faith to destroy said rodents by poisoning, trapping or other means.

The state board of health should require health officers, and inspectors acting under said boards are given authority, to enter upon any and all lands to ascertain if the same are infested with rodents and if the parties holding such property are proceeding to exterminate the same. The board of supervisors in each county and the city council of every city and county whenever by resolution it determines that it is necessary to prevent great and irreparable damage to crops or other property may purchase poison and traps for the destruction of such rodents; has power to employ inspectors to exterminate the rodents under the direction of the health board on both public and private property; if any person fails or refuses to exterminate the rodents the said health officers may at once proceed to destroy the squirrels, the expenses being made a charge against the county, and upon such expenses being incurred the county is entitled to a lien against the property on which the rodents have been destroyed for the cost thereof.

While by the above act it is expressly made the duty of everyone having squirrels upon their places to immediately destroy the same, the only penalty or remedy provided is through action of the board of supervisors or city council, which may order the health officers to enter upon the property and exterminate the same. The most practicable way, therefore, for any of the individuals in any section to obtain results under this act would be to petition the board

of supervisors of the county, in case their residences are outside any incorporated city, to order the health officers to enforce their duties as above stated, and it would be particularly advisable for the people in any particular section of the county to take the matter up very strongly with the supervisor elected from that district. If the matter is thus strongly taken up there is no doubt but that results can be obtained.

ERADICATING THE SQUIRREL

It appears that the squirrel pest is increasing rather than decreasing under the campaign or lack of campaign which has been continued for the past few years. The state law is explicit in the matter but county supervisors have found it unsatisfactory to attempt to eradicate this pest. It appeals to us that the matter could well be referred to the county horticultural commissioner with instructions on the part of the board of supervisors to take up the enforcement of the law which relates to the squirrel pest. It is probable this pest destroys thousands if not millions of dollars' worth of property in this state every year. We have been endeavoring to learn as to method of handling the pest in other counties. Mr. Collins, county horticultural commissioner of Tulare County, writes as to the methods in that county.

The horticultural commissioner here has nothing to do with the control of the squirrel pest. There is a state law governing this which I think places the matter entirely in the hands of the supervisors. A few years ago they appointed inspectors for this work here and conducted a campaign for a couple of years with almost no results as the law was not enforced as it should have been. In Sutter County the supervisors placed the matter in the hands of County Commissioner Stabler, but this is the only county I know of in which the commissioner has anything to do with the matter. The squirrel pest is a very expensive one in this county, and there is so much complaint that our board of supervisors has recently fixed a bounty of three cents, which will, I believe, accomplish more than was done in the endeavor to enforce the law.

Perhaps the bounty proposition might be a satisfactory way of handling the pest. However, handled as the federal government experts do by smothering the pest in their holes, intelligent work on the part of some agent of the county should be able to effect eradication much more quickly than can be done by a system of poisoning or trapping.

BARLEY LIMED TO CONCEAL SMUT

An investigation by the department of agriculture has revealed a practice on the part of certain dealers in California of purchasing smutty barley, treating it with lime and, after mixing it with clean barley free from smut, selling the mixture as choice brewing barley. The lime conceals the smut so that it cannot be readily detected by the eye, and after the limed smutty barley is mixed with clean barley, grain inspectors cannot detect the smut. In consequence they pass the mixture as choice brewing barley. The addition of the lime to the smutty barley does not remove all the smut but merely conceals it. A chemical analysis, however, easily detects the addition of the lime and the presence of the smut. The smutty barley is purchased from the farmers at a low price, but after being limed and mixed with clean barley is sold at the price of choice brewing barley. As the addition of the lime costs little there is considerable profit in this fraudulent practice.

This practice of liming smutty barley and afterwards mixing it with clean barley conceals inferiority and therefore constitutes an adulteration under the food and drugs act.

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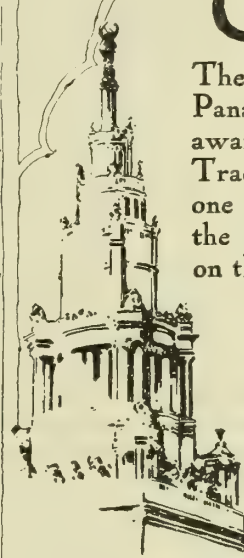
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(California)

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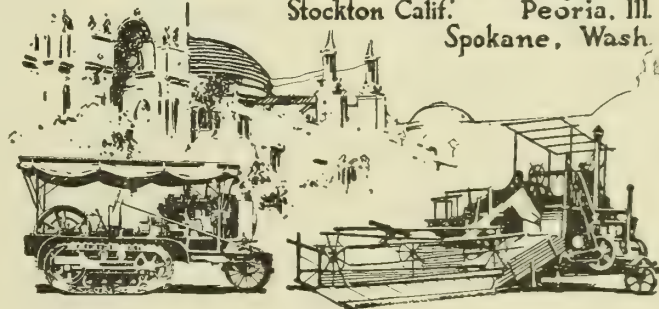
The International Jury of Awards of the Panama-Pacific International Exposition has awarded Grand Prizes for the Caterpillar Tractor and the Caterpillar Harvester. Only one Grand Prize is awarded in each class—the rating is made on the skill in invention, on the value to the world and to agriculture, and on similar points.

Send for Bulletin B 309, which gives full information about the Caterpillar Tractor, or ask for literature on our harvester line.



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loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**DON'T YOU LIKE US BETTER?**

We doubt not many readers of the
Cultivator may recall the days of new
boots with red tops and copper toes
and the justifiable pride taken in call-
ing attention to them. Not otherwise
is the youngster of today with his
coaster or toy auto. So we trust the
Cultivator may be pardoned if it ex-
hibits a bit of the same pride and re-
fers to its new dress or rather the ma-
terial in it. For some time plans have
been making for beginning the new
year with a better paper than has been
used, but if a better paper is good for
the new year it is good for finishing
the old, so instead of waiting, the bus-
iness management has deemed it wise
to begin at once, and by another issue
all the paper will be on a calen-
dared book paper much more pleas-
ing than that formerly used. Clothes
are not the making of the man, but
they are a material help, for the well
dressed man with his chest forward is
more able to compel respect—and
often success—than one careless of his
attire. The Cultivator has always en-
deavored to be neat in its general ap-
pearance and now will increase this
endeavor for the more attractive paper
will enable it to make a better show-
ing of its contents, and we assure our
readers that during the new year
which is approaching we will endeavor
to make the contents of the paper bet-
ter than ever.

We invite our subscribers to join in
the effort to make this paper more of
a power by passing the good word
along to their neighbors. The greater
our family the greater will be the ef-
fort and the greater the possibilities
of securing the very best for all. Espe-
cially do we ask our readers to make
suggestions as to their needs.

A GREAT CROP

There is some good reading in
the report made by Manager G. Harold
Powell of the California Fruit Growers'
Exchange to the directors and mem-
bers of that organization and quoted
in part in this week's issue of the Cul-
tivator.

It will be noted that the total ship-
ments from September 1, 1914 to Au-
gust 31, 1915 were 40,991 cars. Of this
the Exchange shipped 62½ per cent,
and for its shipments secured f. o. b.
California approximately \$19,537,850.
It is the greatest proportion and great-
est total of citrus fruit that has been
handled by the exchange.

This is an immense sum of money
to pass through the hands of one or-
ganization and is evidence of its worth
to the California fruit industry. That
its worth is being appreciated more
and more is shown by the statement
that ten years ago the exchange was
handling 47 per cent of the total out-
put of the state; five years ago, 59 per
cent; and three years ago 60 per cent.

more than \$25,000,000. With all our
being a great gold producer, all our
mines barely exceeded in value the cit-
rus fruit handled by this one organ-
ization.

START A PARK

Many years ago Pomona, a live
and interesting town on the eastern
rim of Los Angeles County, was with-
out a park. Some years before in lay-
ing out the town the land and water
company had devoted a little acre
and a half square to park uses but,
owing to certain complications and to
the fact that the city had never done
anything to improve the so-called
park, it was forfeited. Then the Po-
mona Land and Water Company of-
fered to the city a parcel of about 25
acres of "worthless swamp," or rather
ciénega, and cactus covered hillside.
This was to be a gift conditional on
the "city" (Pomona then was a town
of some 1200 or 1500 people) making
certain improvements. The opposition
to the acceptance of this property was

Agricultural Notes

Federal authorities are warning own-
ers of stock that foot and mouth dis-
ease is often carried by swine, as they
have proved very susceptible to it.

Two thousand five hundred boys
and girls are said to be enrolled in
the corn and potato growing and gar-
dening and canning clubs of Mon-
tana.

The problem of moving Canada's
great wheat crop is one of the most
serious problems which the govern-
ment has to consider. Efforts are be-
ing made to have some of the ships
now on war service released and
every available tramp steamer pressed
into service.

Prices on the onion seed crop of
the Canary Islands show a five per-
cent increase in the past month with
prospects for much greater increase.
So great is the demand for the seed,
not only in the United States but in
Argentina and Cuba, that most of the
seed is grown under contract.

The fight against citrus canker in
Florida is still a strenuous one. Re-
cently a number of growers in Dade
County secured an injunction restrain-
ing the state plant board from enter-
ing their orchards to burn infected
trees. The injunction has now been
overruled and the plant board sus-
tained in its action.

American butter is being imported
into Hong Kong to supply South
China. This trade is usually supplied
by Australia, but her resources have
been so seriously depleted by
drouth and the war drain that the
American goods have found entrance.
American cheese is already very pop-
ular in the Far East.

Chinese demand for ginseng root is
better now than since the unsettled
war conditions have prevailed. Cul-
tivated root has been selling at Hong
Kong at about \$2.90 to \$7.25 per pound.
Sales at that point during the first six
months of the year have amounted to
about 40,000 pounds. The stock on
hand on July 1, 1915 was around about
36,000 pounds, as compared with about
40,000 pounds on January 1 and 70,000
pounds at the same date last year.

The orange and mandarin crops on
the Paterson River, in New South
Wales, Australia, this season were
heavy. The fruit has a large domestic
demand throughout the country dis-
tricts. Exports of citrus fruit for 1913
from New South Wales amounted to
2,352,600 pounds, valued at \$81,480, of
which 2,308,600 pounds, valued at
\$79,027 was Australian produce. The
opening of the Panama Canal it is
hoped will produce a market in the
United States for Australian citrus
fruit.

In a new monograph on European
commercial law issued by the United
States bureau of foreign and domestic
commerce is this interesting state-
ment: It is not generally known in
America that in Germany such ex-
pressions in advertisements as "best
and cheapest place to buy" "sold at
factory prices," etc., are inadmissible
unless true; that actions have been
sustained against merchants who dis-
played signs of "English spoken here"
when the assertion was not in accord-
ance with fact; that it is unlawful to
attempt to entice away prospective
customers standing in front of a com-
petitor's windows; and that a tailor
may be enjoined from describing his
establishment as "first class" when he
pays his workers according to the
fourth class in the scale of wages of
the local tailors' guide.

A LITTLE BUSINESS CHAT

Our readers and friends may not fully appreciate how great-
ly the work of the California Cultivator is aided by the good business men
who favor us with their advertising patronage. We could not continue
the high class of paper we are giving you without their financial help.

Perhaps you do not realize the vast amount of valuable information
to be found each week in the advertising columns of this paper and the
good to be derived from your reading the same. The columns contain a
volume of commercial facts and marketing opportunities that no progres-
sive farmer can afford to ignore.

Many fail to appreciate the assistance they can render us in our work
by giving their support through patronizing our advertisers. It is neces-
sary that we have this support and cooperation from you if we are to
keep up and improve the high standard we have set, therefore, we are
going to print a series of short stories on the benefits and merits of
advertising as a creator of better goods, lower prices and better business.
One of these little stories will appear every other week for the next
year.

We hope to fully explain many things that may not be clear to you
now.

We hope to secure your interest in our advertising columns by prov-
ing their advantages to you and how entirely worthy they are of your
careful reading.

We hope to interest you in advertising because we know advertising
has done so much for you and your friends by providing a better market
and so encouraging men to persevere in the scientific development of
many modern improvements for your benefit and comfort.

We shall prove to you that these advertisers are to be trusted and
are in every respect worthy of your confidence and patronage and that we
guarantee you a square deal at all times.

If you have any questions on this subject you would like to ask write
and let us talk it over.

This percentage should increase and
we believe will increase.

Mr. Powell has analyzed the year's
business and presented the informa-
tion in a most attractive way. We re-
gret that we could not give the entire
report in this issue, for it is not only
good reading matter for the citrus
grower but for the raisin grower, the
dried peach grower and every other
grower who has a product which he is
finding difficulty in marketing. The
exchange is not beyond criticism, but
it is a leader in cooperative effort and
every year is showing more and more
of its worth and more and more is its
example an inspiration.

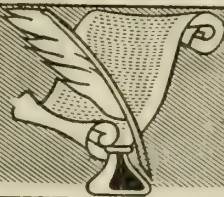
In this connection permit us to refer
to a report just received from the
United States geological survey. This
report makes with satisfaction the
statement that metal production in
California in 1914 showed the largest
output of gold in 22 years. The total
yield of this state during the year was
\$20,653,496 which, with the exception
of the year 1883, was the greatest since
1864. All the metals mined in the
state aggregated during the 12 months

almost strong enough to prevent the
consummation of the deal, but at the
final election the land was accepted.
It was many years before any improve-
ments were made which gave much of
a park appearance to the land. Today
it is one of the most beautiful spots
in California. Other acres have been
added to it and a more far-seeing gen-
eration has taken hold of its improve-
ment and is providing ample means
for its upkeep. This beauty spot is
appreciated not only by residents of
the town but automobile parties with
luncheon baskets make it a gathering
place because of the shady banks
along its stream and the wonderful
view from its hilltop.

There are many towns in this state
which might well follow the example
of Pomona and secure while lands are
cheap a site which may be developed
into a restful beauty spot. It would
be a good investment and add dollars
to the value of property in the neigh-
borhood. We mean this advice not
only for the towns but for rural com-
munities which may well provide just
such a breathing spot for profit and
pleasure.

Agricultural News Notes

of the Pacific Coast



Northern California

Forty-two carloads of sheep and cattle were shipped from Chico to Oakland on August 25.

E. O. Amundsen, recently appointed farm adviser for Placer County, has established his headquarters at Auburn.

Ukiah, Mendocino County, has decided not to hold its usual hop festival this year on account of the Panama-Pacific exposition.

The board of supervisors of Mendocino County has advertised for bids for the construction of the Sand Bluff and Kelly Canyon bridges.

Farm Adviser Christiansen of Humboldt County reports that 22 farm bureau centers in that county are asking the county supervisors to appoint a county veterinarian.

A plan is being discussed among fruit growers of Oroville to establish a shipping industry in deciduous fruits by agreement amongst orchardists to plant at least 200 acres of land to shipping varieties.

A. L. Wisker, manager of the Loma Rica Ranch, near Grass Valley, has offered 50 selected fruit trees to any school district in the county which will agree to care for them in connection with horticultural instruction work.

The American Farm Company, which planted 100 acres to rice on the Shippee Ranch in Butte County, will next year plant 600 acres. Other land owners in the same district are also arranging to plant big acreages to rice.

The state fish and game commission has granted permission for professional fishermen to clear Butte Slough and the Sutter Basin of fish. It is feared by the commission that if this is not done the receding waters will leave the fish to die and decay on dry land.

The first picking of Bartlett pears has begun in Nevada County. The county horticultural commissioner estimates the Bartlett pear crop of the county at approximately 60,000 boxes. This estimate is of perfect shipping pears only.

Superior Judge Sturtevant has declared unconstitutional the recently enacted law compelling all dealers in imported eggs to so label them. This decision was rendered in proceedings brought against the president of the Master Bakers' Association of San Francisco.

One of the most attractive feature exhibits at the Gravenstein Apple Show held last week at Sebastopol was the castle of the queen, a huge Gravenstein apple. At the touch of a wand in the hands of Luther Burbank the apple opened, disclosing the queen and her court.

The directors of the Sacramento Valley Exposition Commission, representing 16 counties of the northern part of the state, met at Sacramento recently to determine what should be done with their exhibits now on display at the San Diego and San Francisco expositions. Suggestions were made that the exhibits be permanently installed either at San Francisco or Los Angeles.

Central California

Raisin grape picking is general throughout Fresno County.

Turlock is shipping out cantaloupes at the rate of 40 cars a day.

E. B. Armstrong, who has a ranch near Delano, has installed an alfalfa mill on his place.

Many fruit orchardists of Monterey County are finding it profitable to keep sheep on their farms.

Over 1000 acres of almonds were set out this season in the Oakdale section of Stanislaus County.

The Tulare Cooperative Creamery paid out cream checks amounting to \$36,500 for July deliveries.

Three Fresno packing houses have started on figs. The run will probably last until November.

An effort is being made to have Tulare and Kern Counties join the San Joaquin Valley Counties Association.

The harvest of the almond crop of the Oakdale section of Stanislaus County began the last week of August.

The Denair local of the Stanislaus County Farm Bureau will meet with Farm Adviser Connor the second and fourth weeks in each month.

Contracts have been made in the Lodi district of San Joaquin County for nearly 8000 tons of wine grapes at a reported price of \$10 a ton.

Merced is sending out every week heavy shipments of live stock. Last week's shipments comprised mules, beef cattle, sheep and calves.

The Associated Raisin Company has been requested by peach growers to market their dried peaches but has declared that it is unable to do so.

The 16 branches of the Stanislaus County farm bureau will unite in a picnic at the Crow's Landing bridge on the San Joaquin River, September 11.

An expert of the United States department of agriculture is in the Pajaro Valley investigating the strawberry industry as it is affected by irrigation.

Malaga grape picking started at Kerman, August 24. Sacchrometer tests show the Malagas running from 18 to 21 per cent sugar. The required test is 17 per cent.

The Tagus Ranch near Tulare is taking up on a large scale the fattening of beef cattle on alfalfa and grain ration. The owners expect eventually to have 1800 animals.

Codling moth is developing seriously in the Pajaro Valley apple orchards. County Horticultural Commissioner Volck recommends spraying with arsenate of lead solution at once.

The Fresno County Poultry, Pigeon and Pet Stock Association is discussing advisability of holding no other show than that in connection with the district fair September 28-October 2.

A meeting of potato growers will be held at Salinas, Monterey County, on September 20 in the chamber of commerce rooms. The state horticultural commissioner has called the meeting to consider means of handling diseases of potatoes.

Southern California

Bean growers of Buena Park, Orange County, expect a \$100,000 crop.

The harvesting of Blackeye beans is on in Orange and Ventura Counties.

The water in the Colorado River has fallen alarmingly within the last week.

California had the highest record for yield of both long and short staple cotton in 1914.

Two thousand automobiles enter San Diego County each week bound for the San Diego Exposition.

Vegetable growers of northern Orange County are talking of forming a marketing association.

Threshing of lima beans has already begun on the San Joaquin Ranch in Orange County.

The Santa Barbara News is authority for the statement that the bean crop in that county is the biggest in its history.

Buena Park, Orange County, will hold a harvest festival early this month, the date not yet being announced.

Premium lists are being distributed for the Riverside District Fair, which opens on October 5, continuing until October 9.

The California Walnut Growers' Association announces that it has only \$1500 worth of old stock unsold in Eastern markets.

Imperial Valley exhibitors of cotton at the Panama-California Exposition have received one grand prize and three silver medals.

A stalk of cotton bearing 112 bolls is on exhibition at Calexico. It was picked from the cotton field of Robert Burhans of Calexico.

Some Beaumont peach growers are peeling their fruit before drying, believing that they will secure a ready market for the peeled article.

The California Vegetable Union has leased ground for a vegetable packing house at Garden Grove. The erection of the house will begin at once.

The Beaumont Fruit Growers' Association last week shipped two carloads of Bartlett pears and a small shipment of Winter Banana apples.

The Claremont Citrus Association has paid its growers this year \$34,000 more than last year. The association shipped 496 cars of oranges during the season.

The Brock Date Garden at Heber in the Imperial Valley has been purchased by Dyer B. Holmes of Indio and the date palms will be moved bodily to his orchards at Indio.

Mr. Herbert Mathews of a large manufacturing concern of Cleveland, Ohio, is investigating possibilities of establishing a branch garden furniture factory at Los Angeles or some point in Southern California.

Various commercial bodies throughout Riverside County have organized into a central association to be known as the Riverside County Chamber of Commerce. T. C. Jameson of Corona has been elected president, H. S. Walsh, Banning, first vice-president; C. B. Lewis, Thermal, second vice-president; A. S. Dudley, Riverside, secretary; A. W. Stewart, Elsinore, treasurer.

The Coast

The Arizona wheat crop is estimated at 1,160,000 bushels.

The grain crop of the section about Pullman, Washington, will be a bumper.

Prune growers of Meridian, Washington, are preparing to start packing within a couple of weeks.

The Yakima Valley Fruit Growers' Association has announced returns on the season's cherry shipments. The association marketed 196 tons.

The sales committee of the Northwest Live Stock Show to be held in Lewiston, Idaho, November 29-December 4, is now getting out its sales catalog.

State Veterinarian Bodle of Idaho is conferring with stockmen to determine what measures should be employed in dipping sheep to rid them of ticks and scab.

To investigate pear blight W. S. Ballard of the United States department of agriculture will be stationed for several months in the district about North Yakima, Washington.

Opening prices for apples determined at the recent conference of the Northwest Shippers' League in Seattle are considerably higher than those prevailing early in the season of 1914.

All the sheep and a portion of the cattle in New Mexico are to be dipped beginning September 1, according to a recent ruling of the live stock sanitary board and the United States bureau of animal industry.

Owing to outbreak of foot and mouth disease President Hagenbarth of the National Woolgrowers' Association has cancelled the annual ram sale announced to take place at Salt Lake City on September 7.

The Northern Pacific Railway announces reductions on apple shipments ranging from 20 to 30 cents on a hundred pounds where the fruit is shipped in ton lots to central shipping points for consolidation with large shipments to Eastern markets.

The Coconino Cattle Growers' Association, recently organized at Flagstaff, Arizona, is drawing up plans for a 50-mile drift fence. The association will furnish the wire and build the fence, the forest service furnishes the posts and guarantees right of way.

The manager of the Spokane Fruit Growers' Association is urging apple growers to hold for better than a dollar per box, which is the price now being offered by a cash buyer. This official states that on a recent trip he sold over 100 cars of Spokane apples on future orders at prices well over a dollar.

The Mesa, Arizona, Farmers' Improvement Association is a reality now, the following officers being elected: E. Allen, president; W. W. Carney, vice-president; B. Winger, secretary treasurer, and C. S. Stewart and M. C. Phelps, additional members of the executive committee. Mr. Winger was elected councilman and E. Allen alternative councilman to represent the Mesa organization in the county Farmers' Improvement Association.

The Greatest Sale in the World Combination Sale

A. W. Morris & Sons
WOODLAND, CALIFORNIA

McAlister & Son
CHINO, CALIFORNIA

State Fair Grounds, Sacramento
October 6-7, 1915

175 HIGH-CLASS REGISTERED
Holstein-Friesian Cattle 175

Tuberculin Tested

Greatest in number of high record cows!

Greatest in high yearly record cows!

Greatest in daughters and sons of great yearly record cows!

Bred to the greatest milk bred bulls in the world—including sons of cows that hold every world's milk record from 7 days to 3 years.

Greatest bred and greatest show bulls in the world!

Greatest in respect to individuality, growth and conformation!

All at your own price!

For Catalog, Write

F. L. Morris, Woodland, California } Sales
Jas. W. McAlister, Jr., Chino, Cal. } Managers
Col. B. A. Rhoades, Los Angeles, Auctioneer

Building to a HIGH Standard, Not DOWN to a LOW Price

IS OUR MOTTO

If a better silo than the

Ideal Green Feed Silo

could be built, we would build it.

Our TWENTY YEARS of practical experience in silo building has enabled us to discover and eliminate the faulty features of design and construction and to manufacture a silo that is a thoroughly practical piece of equipment.

WE COULD CHEAPEN the IDEAL GREEN FEED SILO:

- BY putting on ½-inch hoops instead of ¾-inch.
- BY furnishing a door that would leak instead of the patented refrigerator, air-tight type that is an exclusive feature in the IDEAL.
- BY not furnishing a 3-ply circular plate at the top to hold the silo rigid and round and prevent its collapsing.
- BY not supplying an acid-proof, water-proof paint for the inside of the silo.
- BY making the doors serve the purpose of a ladder instead of furnishing a ladder complete within itself fastened to the silo at one side of the doors.
- BY faulty design and inferior material and construction and omitting a galvanized steel ventilator for the roof.

But if we did, you would not be satisfied with it. A silo to be of any value must be absolutely air and water-tight and of such design, material and workmanship that the shrinkage, while standing empty, can be readily taken up and the silo made just as serviceable as when first constructed without its being necessary to rebuild it every year, or to use pitch to chink up the cracks, as is necessary in others.

SEND FOR SPECIAL SILO CIRCULAR Z.

Save Your Rusted Grain by Putting It Into An Ideal Green Feed Silo

DE LAVAL DAIRY SUPPLY CO.
San Francisco **Seattle**
Everything for the Dairy



Live Stock and Dairy



HIGH PRICED HOG FEEDS

Written for the California Cultivator
By W. S. Guilford

THE profits in the business of growing hogs depend upon a number of factors. One of the most important of these is an abundance of good feed that is either produced cheaply or bought at a low price.

Alfalfa and skim milk for protein and barley and corn for carbohydrates are the cheapest feeds available to most California hog growers.

Many good hog feeders, however, who depend on these feeds for the principal parts of the rations they feed, have on hand at all times a supply of some other feeds that are generally listed as "high priced." If used judiciously they prove to be cheap feeds in many instances.

Tankage, for instance, is frequently worth more than it costs when it is used to balance a ration too high in carbohydrates. Tankage has a high per cent of protein and mineral elements so that a small amount of it will make a big difference in a ration. It should generally not make up more than ten per cent of the concentrate part of a ration. It is a great aid in the development of bone in hogs, and when fed to brood sows so well supplies the protein, animal matter and minerals required that they do not eat their pigs.

Linseed oil cake meal is another feed that can be used to advantage for a part of a hog's ration under certain conditions. As five or ten per cent of a ration for sows that are being fed considerable grain, it supplies protein and keeps the alimentary tract in good condition. In the same proportion it is a good thing to help keep pigs growing rapidly after weaning, and it is a good thing to give hogs in run down condition from any cause to help give them a start toward thriftiness and growth.

Middlings is another feed that is generally somewhat high in price that is profitably used by many California growers. It is one of the best of feeds to make a "slop" feed for sows and growing pigs and is rich in protein.

All animals appreciate a variety of feeds. This is particularly true of hogs and one reason why a supply of high priced feeds to be fed when needed is good economy.

SANITATION FOR THE COW

THE cow should not be groomed, bedded, or fed immediately before milking, as these operations fill the stable air with dust and bacteria. Frequent attention to the distribution of bedding is just as important as to supply a large amount of it. Often a tour through the stables the last thing at night and a few minutes' attention to the distribution of the bedding at that time will save half an hour's work of cleaning the cows in the morning. If after each milking the manure is removed a considerable distance from the stable bad odors will be kept from tainting the milk, and the danger of contamination from filth-laden flies will be diminished. The

manure should be removed at least twice daily and never handled in the stable immediately before milking. The fly nuisance is caused by accumulations of manure in which the flies breed, and when conditions permit the manure should be removed daily to the fields. Flies carry bacteria and filth, and earnest efforts should be made to keep the stable free from them. If the stable and its surroundings are clean, free from accumulations of manure and other matter which attracts flies, the stable can be kept fairly free of them by the use of fly poison and traps. In addition to removing the accumulated manure from the gutter every day, the soiled bedding under the cow should be raked back into the gutter and replaced with clean bedding.

The feed for cows should be palatable and nutritious. Moldy and decayed feed and such feeds as may injuriously affect the cow's health or the character of the milk should be carefully avoided. The odor and flavor of milk are very readily affected by rape, cabbage, turnips, and other feeds having strong odors, and if these are used they should be given after milking, in which case there is little danger of imparting an unpleasant flavor or odor to the milk. Where pastures are overrun with garlic or wild onion the cows should be removed from the pasture several hours before milking and given a foddering of hay in the barnyard.

Owing to the dust and odors which arise from the feeding of hay, grain and silage in the stable, it is best from a sanitary standpoint to feed after milking rather than before. A liberal supply of salt should be provided in a place where the cows can have ready access to it. It is of prime importance that the cows have an abundance of fresh, pure water. Cows which produce 25 pounds of milk a day require 75 pounds or more of water daily, and instances are on record in which heavy milkers have consumed more than 300 pounds of water a day. This large quantity of water is necessary not only for the formation of milk but also for the digestion and assimilation of the large quantities of food consumed, much of which is roughage. It is not wise to permit cows to drink large amounts of ice-cold water, and in order to encourage them to drink a sufficient amount of water in extremely cold weather it is necessary to warm the water slightly.

CARE IN DRIVING STOCK

Written for the California Cultivator
By Sacramento Valley Contributor

Two fine Shropshire rams were lying along a roadside in the Sacramento Valley, dying, and a half dozen others were almost overcome by the heat. They were quite fat and had been driven too fast during the heat of the day. The two rams that died were worth \$40 or \$50 each.

It is hardly possible to use too great care in driving animals during the summer weather in the great interior valley and elsewhere in California. And the same thing holds true everywhere.

Most farm live stock is driven very

little, with the exception of horses and mules of course, and such driving as is necessary in bringing in dairy cows twice a day. But other animals are driven so little that they are sure to become somewhat excited and heated, even if the weather is cool. Add to this a temperature several degrees above 100, or more than the normal blood heat of the animal, and it requires very little added exertion to make them very warm, and if they are fat the danger point is soon reached.

It is a good plan to do whatever handling is necessary during the cool parts of the day. Sheep may be driven early in the morning, rested during the heat of the day, and moved again in the evening. The same can be done with cattle. A good time to handle hogs is during the cool of the morning. At the Butte City Ranch at Butte City in Glenn County the Berkshire

farms in connection with dairy, fruit, grain and even hogs.

There are several tons of weeds, corn stalks, second rate hay, stubble, and such things that are all suitable feed for sheep, that go to waste on many farms every year and that could well be made into high class mutton.

Ewes and lambs will eat up the "odds and ends" about a farm and pay well for the opportunity.

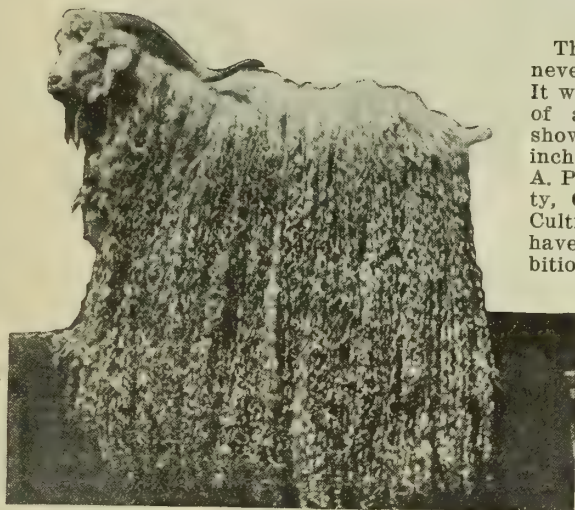
Here is a plan that is suggested by one practical sheep man, by which a small farmer can get into the sheep business at a comparatively small cost.

Every year there are some old ewes that are not able to maintain themselves in good condition and raise a lamb under the range flock conditions where 1500 to 2000 are kept in one band. Naturally the weak ones get the poorest of the

SOME MOHAIR

This is a photo of a never shed buck, "Dodo." It was taken at 39 months of age and the mohair shows a growth of 39 inches. Its owner, Mr. F. A. Pierce of Douglas County, Oregon, writes to the Cultivator that he will have this animal on exhibition at the Panama-Pacific exposition at the sheep and goat exhibit November 3 to 15.

There is more interest in California in the mohair industry at present than at any preceding time.



hogs are dipped in a long dipping vat containing Kreso No. 1 dip with a layer of crude oil on top. They are dipped every week to keep them free from lice and ticks and this work starts at daybreak.

They have pens in the oak woods to lie in during the heat of the day and instead of this dipping operation being dreaded both by the hogs and the men is rather an enjoyable event. The hogs grow very fond of the bath and it is fun to see them go through. It has been said that you cannot drive a hog across the road without making him shrink in weight, but when they are handled carefully in the cool of the morning the shrink is certainly very small.

A great many hogs are hauled to market at night. A big shipment went in to Colusa on wagons recently and arrived before seven o'clock. This meant that they had left home late in the evening. These hogs were in fine condition, were put in shaded yards and given plenty of water until they were loaded on the boat for San Francisco. They were kept shaded and well wet down on the boats so that from the farm to the slaughter house they were handled in a way that would appeal to any lover of stock or member of the Society for the Prevention of Cruelty to Animals.

It pays to handle stock in this way, and it is certainly a losing proposition to drive stock too fast in hot weather.

THE SMALL FARM FLOCK

Interest in the maintenance of a small flock of mutton sheep on small farms of all kinds in California is increasing and will continue to until there are thousands of flocks in the state.

They can be handled to advantage on almost all types of diversified

feed and continue to become poorer instead of getting better. If a hard winter comes or feed conditions for any reason are unusually poor, these old ewes are apt to die. Consequently the wise flock master should be willing to sell them at a considerably less price than younger, stronger ewes would bring. If young ewes, those from two to five years old, are worth \$6.00 to \$7.50 each these old ones should sell for \$2.50 to \$4.00.

But when taken out of the big flock, where they get the poorest of the feed because the stronger, younger sheep crowd them out, and given plenty of good feed like alfalfa, they pick up rapidly and soon become fat. These same good feed conditions that have made the old ewes fat will keep them that way for one or perhaps two or more years. They will produce one or two good lambs and can then be sold for mutton.

This is possible simply because of better feed conditions.

By getting these old ewes and handling them as is indicated, a small farm flock can be started at a small cost.

Then by using good rams the standard can be increased from year to year and the mutton value of the lambs produced gradually raised. Shropshire rams are very satisfactory for this purpose.

MORE LIVE STOCK WITH THE FRUIT

Written for the California Cultivator By Special Contributor

The restricted European outlet for California fruit and the low prices for some kinds that result from this and other reasons are causing many fruit men to think of some way to assure an income from their places with products other than the fruit.

It has many times been stated in

DAIRYMEN— Read this Letter

Chino, Cal. July 15, 1915.
THE LARROWE MILLING COMPANY.
Gentlemen—As one of the largest users of Larrowe's Dried Beet Pulp in Southern California, it gives me a great deal of satisfaction to be able to recommend it not only as an economical feed, but also as a most efficient one; and as a supplement to alfalfa, I know of no grain its equal.
We feed dried beet pulp without molasses, and have probably used it more extensively in connection with feeding calves and young stock than any one in California. Our calves are allowed to eat all the beet pulp they want from the first, and receive an average of about six pounds per day until two years old. The results are more than satisfactory, and we accomplish a growth of from 800 to 900 lbs. in our heifers when but twelve months old.
In feeding for Official Test, beet pulp is used when but winter we broke all Southern California records, making as high as 28.85 lbs. butter in seven days with a full-age cow, and 18 lbs. with a two-year-old heifer. We attribute our success largely to dried beet pulp, as no roots or ensilage was fed at all to these cows, nor to any of our cows that made large Official Records. One cow, after being taken off Dried Beet Pulp and Alfalfa Hay, first-calving twice a day, and receiving nothing but Dried Beet Pulp and Alfalfa Hay, first-calving entire herd, including a number of the heifers, is milking, according to the figures of the District Tester, better than 40 lbs. per day. We could not do without dried beet pulp.
Sincerely,
(Signed) McALLISTER & SON,
By James W. McAllister, Jr.

from one of the best known and most successful Holstein-Friesian breeders in California

TEST IT ON YOUR COWS

You can find out for yourself the real worth of Larrowe's Dried Beet Pulp by ordering a single 100-lb. sack from your dealer and feeding it to one cow whose milk record you know. It may be had either plain or with molasses. Ask your dealer.



VALUABLE BOOKLET ON FEEDING—FREE
Write for a copy of our booklet, "Profitable Feeding," containing valuable suggestions on feeding and full information about Dried Beet Pulp. Address:

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BUILT FOR YOUR PARTICULAR NEEDS.
EXACTLY AS YOU WANT THEM.
ALL SIZES AND DIMENSIONS

16x36 REDWOOD STAVE SILO MANUFACTURED BY US FOR THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION, SAN FRANCISCO, 1915

ALL OUR SILOS, TANKS AND PIPE ARE DESIGNED BY ENGINEERS TO MEET EVERY CONDITION. MADE IN OUR BIG FACTORY FROM CLEAR, AIR DRIED REDWOOD. SELECTED FROM A STOCK OF 40 MILLION FEET WHICH WE CARRY AT ALL TIMES.

ASK US FOR PRICES

TANKS

BUILT TO ORDER TO SUIT ALL USES AND USERS. CHEAPER THAN METAL TANKS. LAST LONGER. WON'T RUST. CAN BE TAKEN DOWN AND RE-ERECTED WITHOUT DAMAGE. CAPACITIES 500 TO 500,000 GALLONS. TOWERS INCLUDED IF YOU WANT THEM.

PIPE

MACHINE BANDED OR CONTINUOUS STAVE—FOR WATER SUPPLY—IRRIGATION OR POWER. CHEAPER THAN ANY OTHER PIPE OF EQUAL SIZE OR CAPACITY. LONGER LIVED THAN ANY METAL PIPE EXCEPT CAST IRON.

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Milk Coolers

Weber Copper Tubular Coolers

We manufacture all our own Coolers and can supply Coolers and Aerators any capacity from one cow to 20,000 pounds per hour.

Buhl "Sanitary" Brand

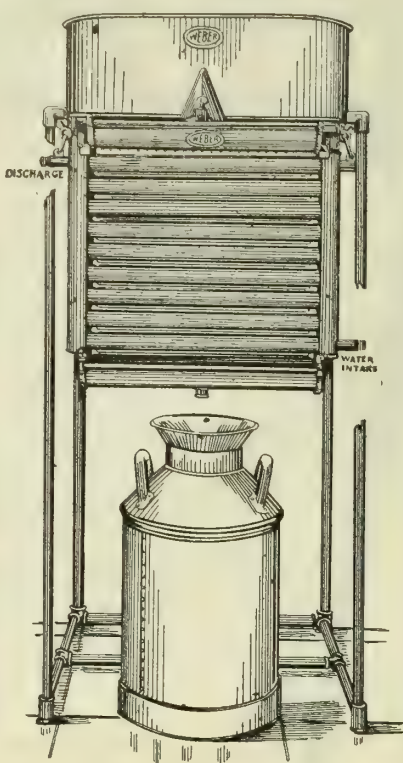
Tinned Steel Milk Cans Excel in Design, Finish and Durability

Made of the finest grade of Cold Rolled Steel

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Endorsed by Pure Food Commissioners and the highest dairy authorities. ALL POPULAR STYLES AND STANDARD CAPACITIES.

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Manufacturers and Importers of Machinery, Silos and Appliances for the Dairy and Creamery

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Let's Go!

to the

California Holstein Breeders' Second Consignment Sale

of

175 High-Class Animals 175
Tuberculin Tested

at

Hanford, October 14-15, 1915

and Get Started Right!

A Great Selection to Choose From

Cows with records as high as 29.90 lbs. butter in 7 days made as a 4-year-old.

Daughters of cows with records as high as 30 lbs., 29.90 lbs., 24.45 lbs., as 3-year-old 24.45 lbs., are 4-year-old 22.50 lbs.

Daughters and granddaughters of great sires, including 15 daughters of Colantha Sir Pontaic Aaggie—best bred son of the great Sire Colantha Johanna Lad, granddaughter of Pontiac Hengerveld Parthenia and others of equal note.

Bred to many of the greatest sires in the West! Their calves will be worth more than the dams bring.

And about 20 high class young males, many of which are ready for service.

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Jas. W. McAlister, Jr., Chino, Sales Manager
Col. B. A. Rhoades, Los Angeles, Auctioneer

Australia has been forced by drouth conditions to become an importer instead of an exporter of butter.

Thoroughbred Poland China Swine
High Grade Stock of Best Strains
Young Stock For Sale
M. BASSETT Hanford, Cal.

the Cultivator that no single crop agriculture has ever succeeded anywhere in the world for any long period and that every California orchard should have a live stock department.

Those who are starting fruit farms will do well to set aside a part of the acreage for growing food for animals and provide barns and corrals so that they can be suitably cared for.

What a fine thing it would be this year if fruit growers could say: "Well, I would like to market my fruit as a fruit crop, but with the hogs and sheep and cattle that I have and can get, I will be able to get a price for it that will not make a loss on the cost of production because there will be big packing costs that I will avoid."

This very enviable situation is one

of the best son of Colantha Johanna Lad who is the greatest living sire of large milk producers in the world, and other high record cows and magnificent individuals such as have never been offered in the West with the exception of our Sacramento sale on October 6 and 7.

Where else could a breeder go out and buy such animals? He cannot bring any stock out from the East for many months on account of new outbreaks of the foot and mouth disease last month in New York, Illinois and other states. Never before has such an opportunity been offered to California buyers, and it is up to them to take advantage of this chance and secure stock in which there are many 30 pound possibilities. Because of the tightness in the money markets these breeders have been compelled to part with stock that they would not have



De Kol Hengeveld Burke

that every fruit grower should make an effort to be in. All cannot do it, of course, but these ideas may reach many who can begin in such a way as to bring this about, or others who can rearrange their affairs so as to do it.

There are few fruit farms that cannot carry a few hogs without much trouble. They must have some alfalfa for pasture, and some grain will need to be bought, but the litters can come in the spring or early summer so that the pigs will be getting good size when the refuse fruit is to be consumed, then they will be in good condition for finishing on grain later.

There has been some discussion in the Cultivator about sheep to be kept in connection with an orchard, and this interest is manifest in many places throughout the state. A few sheep can well be kept to clean up along ditches, in cultivated fields and elsewhere as weeds and grass appear.

One of the biggest subjects before California farmers today is "More live stock—how to get it and take care of it."

HANFORD HOLSTEIN SALE

The California Breeders' Second Consignment Sale to be held at Hanford on October 14 and 15, consisting of 175 head of the highest class registered Holstein cattle, we think is bound to set a new standard for consignment sales in the United States.

The first Breeders' Consignment Sale averaged \$397 per head for 97 animals, which was by far the greatest average of any of the numerous sales of pure bred cattle held last fall in America. This year however there will be almost twice as many head sold and several times the number of high record cows. Last year there were only granddaughters of the great sires of the breed while this year there will not only be numerous granddaughters but any number of daughters of the world's greatest bulls. There will be a complete dispersion of the C. C. Lester herd of Gilroy, of 65 head, and the rest of the consignors have promised me that they are offering the very best animals out of their herds, and there are none too good or well bred to be spared. Twenty-five cows with records as high as 29.90 pounds butter in seven days as a four-year-old, 30 daughters of great record cows, including two daughters of the 29.90 pound four-year-old, one daughter of a 30 pound cow, and many others above 20 pounds; 15 daughters

sacrificed before under any conditions. We do not expect however the prices paid for the stock to be commensurate with its value because of the financial stringency, and it behooves every breeder therefore who wishes to make money to be at Hanford in October at the big sale.—J. W. McAlister, Jr., Sales Manager.

CHEESE MAKING

(Continued from Page 243)

in curing, that is, three months or more as against two to three weeks for the California, necessitating greatly increased storage space, more carefully constructed curing rooms, and possibly cold storage in the hot weather. (5) Owing to the longer time for curing and before cheddar cheese can be marketed the money is tied up too long.

Gilroy factories make either a stirred curd or half cheddar. The difference lies in the method of handling the curd after the whey is drawn. In the former the curd is stirred frequently with the hands to prevent its matting together. Salt is mixed with the curd and in a half hour to an hour it is ready for the press. In the half cheddar process the curd is allowed to rest in the vat until it has matted, then it is cut into large bricks with a knife. These bricks are turned at intervals to keep them of an even temperature throughout and to allow the whey to drain out. In a half hour to an hour they are put through a curd mill which cuts them into small squares. Salt is then added and soon the curd is put into the press. The full cheddar process consists in carrying the curd along for two or three hours more in the brick form before putting through the curd mill.

Gilroy cheese men all say they receive in San Francisco a premium on their cheese to the extent of one cent above the quotation for California Fancy. This in addition to the reasons given above makes them loath to change to the full cheddar process. In a San Jose grocery the other day I saw cheese marked "California 18 cents," "Gilroy 20 cents." The adage "A prophet is not without honor save in his own country" does not apply to Santa Clara cheese. I brought home from Gilroy a few pounds of half cheddar two months old, and if I could always secure as good California cheese I would not be asking my grocer for "eastern."

Poultry for Profit

THE COCHIN AND ITS INFLUENCE

Written for the California Cultivator
By Jean A. Koethen

IT was in 1843 that Her late Majesty Queen Victoria received from the British ambassador to China a present of five pullets and two cockerels. These birds were called in various descriptions of them "Cochin-China fowls," "Cochin fowls," and "Shanghais," and the names Cochin and Shanghai seem to have been applied at that time indifferently to all the birds of this breed, though they differed somewhat in color, shape and feathering.

These Shanghais or Cochins which were introduced into England in the early forties and to America probably about the same time, though we have no authentic record of them prior to 1853, were epoch-making birds. They were very large and very hardy and had been bred to quite a high state of perfection by the Chinese.

Their introduction both in England and America created more enthusiasm than has ever been awakened by any other breed. The great vogue of the White Orpingtons a few years ago was nothing to it. They were reported to produce, not a single egg per day, but two or three, and their size was greatly exaggerated. They were of various colors, being mainly white, black and the whole gamut of buff and yellow shades. Some were tall and rangy, some medium, some rather short; they were mostly feather-legged, but some legs were clean. They were all coarse feeders, and got fat on it; never wished to fly and were contented and happy in a grass plot with a fence two-and-a-half feet high. The breast was tender and juicy but somewhat deficient in quantity, but this was fully counterbalanced, so their admirers claimed by the very large legs and thighs.

This rather mongrel bird, as it seemed when first introduced into America, was at once taken up by fanciers, and a real American type was developed, with full, round breast, thick fluff and short leg as it exists today, but the original bird served in large part as the foundation for three other breeds, the Plymouth Rock, the Wyandotte and the Buff Orpington. Being extremely hardy, of great possibilities as a meat producer and withal a bird easily bred in confinement, its value was at once realized by breeders and many attempts were made to incorporate these qualities into a breed which should also be a producer of many eggs.

The Plymouth Rock

The first fowl to bear the name of Plymouth Rock was developed about 1849 by intermingling Cochin, Dorking and Malay blood. The Dorking was the best of English table fowls and the Malay a very hardy breed brought from southeastern Asia by sea captains. The breed produced by this mixing of blood was a mongrel and of little value. It was 20 years later that D. A. Upham exhibited in Worcester, Massachusetts, the first

Barred Plymouth Rock, which was bred from a cross of a Single-comb Dominique male and a Black Cochin. Other breeders obtained similar results by other crosses, the most notable of which were: Black Spanish and White Cochin top-crossed by Dominique; Black Spanish and Gray Dorking, top-crossed by Dominique (gray strain); Dominique and Buff Cochin; Light Brahma, White Cochin and Dominiques (Drake strain).

The Upham strain was the foundation of another strain known as the Pitman strain, and this in turn was improved in 1876 by H. B. May who crossed it first with the Light Brahma and later with the Grade Game, which latter cross is held responsible for the great stamina of the breed and its great weight combined with moderate size. It seems probable that the best of our modern Barred Rocks date back to this strain.

White Plymouth Rocks originated in sports from the Barred variety. It was to be expected that the white of the Cochin cross would crop out occasionally in later generations, and when about 1875 a Maine man by the name of Oscar Frost hatched white chicks from Barred Rock eggs, plenty of Barred Rock fanciers were ready to admit that they had had the same experience. These white chicks all had the Barred Rock shape. They were not at first pure white, but after several years of careful mating were found to breed true. All these white sports seemed to come from either the Drake strain, which contained the White Cochin cross, or from another strain called the Essex, into which a fowl called the White Birmingham had been crossed. Just what this White Birmingham fowl was I have been unable to find out. It seems to have disappeared from the records except for an occasional reference.

The Buff Rock is of different and much later origin than the other two, having been first exhibited in 1890. There were two original strains, the Wilson originating with J. D. Wilson of Worcester, New York, from Buff Cochins and Light Brahmas, and the Fall River, produced by several fanciers at Fall River, Massachusetts, by crossing Rhode Island Reds and White Rocks, and also from Rhode Island Reds which had some Plymouth Rock blood in their veins and were of the buff shade into which the rich Rhode Island Red color sometimes degenerates.

The Wyandotte

The origin of the Wyandotte is shrouded in obscurity. In the early eighties J. Y. Bicknell, secretary of the American Poultry Association, wrote: "I hope you will not accept the statement of anyone as to a knowledge of the origin of the Wyandottes, for there is not a living man who knows when they made their first appearance." Mr. Bicknell also said that as early as 1866 birds similar to the Wyandottes were bred in Oneida County, New York., and that a Mr. Payne made an attempt to have them recognized by the association in 1877, but "failed simply because the specimens offered as samples were

pronounced unworthy of recognition." Just after they were admitted to the Standard in 1883 I. K. Felch wrote "It was, without doubt, the intention with the first cross to produce an improved Cochin Bantam, the cross being a Seabright Bantam cock with a Cochin hen. When the size proved too large, they were offered and illustrated as Seabright Cochins. This suggested the cross of Silver-Spangled Hamburgs with Buff Cochins. These two crosses, mingled with another cross through a Cochin hen, became the blood mixture of the early birds offered to the American Poultry Association as American Seabrights."

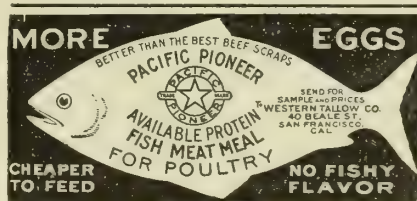
The name "Seabright" which Mr. Felch uses above is associated with portions of New York and Michigan, where birds known as Seabright Cochins, Seabright Brahmas and American Seabrights had been bred a number of years. It was these same portions of New York and Michigan that had formerly been the hunting grounds of the Wyandotte Indians, and so, when difficulty as to the name arose among the fanciers seeking to get the breed admitted to the Standard, the suggestion of the name Wyandotte came as a happy solution of the problem. The Mr. Houdlette who suggested the name admitted afterward that the name of a coasting-vessel once owned by his father was in his mind. Whatever the actual idea contained in the name, it was adopted at once, and is still the name of one of our most valuable breeds, but there seems to be no doubt that the name "Seabright Cochin" was the original name of the breed.

The original Wyandotte, when admitted to the Standard, was much like the Silver Wyandotte of today. The males were similar to the Dark Brahma in both form and color, the females had the form of our present Silver-Spangled Hamburg females with grayish-white breasts and backs, sometimes with darker ticking. It was received with great applause, and a tremendous boom followed, which soon fell flat, as all booms do, but the Wyandotte has steadily won its way to favor because of its good size which is just right for the Sunday dinner for a small family, its rapid growth and its early and continuous egg-production.

The Golden Wyandotte was the second variety brought before the public and was the result of crossing Rose-Combed Brown Leghorns, Pea-Combed Partridge Cochins and some Buff females. The males from this combination were mated with American Seabright females.

The White Wyandotte originated as a sport from the Silver, as did the Black. The Buff Wyandotte, early in the nineties, was bred from a cross of Silver Wyandottes on Rhode Island Reds, this cross being bred later to a Cochin cross. W. R. Wooden of Michigan, when sec-

(Continued on Page 258)



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Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoas, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

For Sale—Eureka Walnut Trees, budded on Native Black Walnuts. Choice stock. Order immediately. Don't delay. Wm. Holte, Fullerton, Cal.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Nelson's Nursery, Pasadena, Cal.

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Just Out—The Cultivator Poultry Book. "Poultry for Profit" by Jean A. Koethen. Published by the Cultivator Publishing Co. Highly endorsed by experts. Over 200 pages, 50 illustrations. Contains simple methods of avoiding and overcoming difficulties. A guide to poultry success under Western conditions—it tells what to do, why to do it, and how to do it. Nicely bound in cloth. Price \$1.00 postpaid, or with Cultivator one year, \$1.75. Send orders to Cultivator Publishing Co., 115-117 North Broadway, Los Angeles, Cal.

Baby Chicks—Rhode Island Reds and White Leghorns. I guarantee safe arrival of a full count of strong, vigorous chicks. I can please you if you will give me your order. Fall chicks are easy to raise and do well. J. W. Lyon, Gardena, Calif.

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For Sale—Blue Andalusian Cockerels, \$2.50 and \$5.00, from my Chicago Prize Pen. Improve your flock with one of these fine males. Write for folder and description. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

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Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

MISCELLANEOUS

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

A Genuine Vulcanized Rubber Self-Filling Fountain Pen for 25 cents. Every pen guaranteed to write; coin preferred. Will Hurley, Box 512, Lompoc, California.

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I have another crop of seventy-five head of BIG TYPE POLAND CHINA BOARS, born in February, sired by IOWA WONDER, who is a son of A WONDER, the GREATEST POLAND CHINA BOAR, LIVING OR DEAD. IOWA WONDER is in the 1000-LB. CLASS. One of his sons from one of my good registered sows should make YOU MONEY. I will sell the best first. On account of being overstocked will sell them at \$20 each while they last, but they will not last long at this price, so ACT QUICK if you want an EXTRA GOOD BOAR FOR LITTLE MONEY. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes, pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

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For Sale—A Saanen Buck, two years and four months old, large, white, born hornless, fertile, thoroughbred, registered. Price \$75.00. John Stewart, Box 27, Mentone, Cal.

Blue Ribbon Herd Duroc-Jersey Hogs, Service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F., 1915, prices. John P. Daggs, Modesto, California.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Poland Chinas—200 head fine individuals, weanlings to eight months. Satisfaction or money refunded. Geo. V. Beckman, Lodi, Cal.

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For Sale—160 acres, some improvements, new pumping plant, some alfalfa. A good place for a dairy and hogs. Angie Bell, San Miguel, Calif.

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Combined stenographer and choreman, competent, business experience, run gas engine; sober, industrious, now employed; wants engagement on or before November 1st. Good references, furnish bond if desired. Address Box L, care Cultivator.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

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I know of three or four breeding pens at the present moment, of proven value, that are for sale. Their owners have all the stock they want and would gladly sell at a comparatively low sum while they still have a breeding price. I would here express the opinion that many poultry breeders keep their stock birds far too long. I have often been astonished at the age of some prospective parents in the breeding pen, referred to with pride by their admiring owners. The Age of Faith is certainly not yet past. Anyhow it is at dead times like the present that the man of small means has the chance to pick up stock that otherwise would be beyond his reach.

In the purchase of breeders there is one point that can not be too strongly enforced, and that is to make it a strict rule to buy none but hen hatched birds. I repeat it, let none but hen hatched and, if possible, hen raised, birds be the parents of your chickens. And I would go farther and urge that the grand and great grandparents of your stock be the same. In other words, for stock purposes buy only from people who make a practice of natural incubation. I intend no reflection on artificial incubation. There are plenty of good machines and also of very clever operators and considering the happy-go-lucky character of much of the mating there is an astonishing quantity of useful chickens turned out but, a big but, Nature's machine is still unbeatable.

The ever increasing demand for great blocks of day old chickens makes it practically impossible to insure anything like the observance of sound breeding principles, and the thoroughly reliable strains are very few. I suppose the fingers of one hand would cover all the White Leghorn farms of California from which many men would think of buying eggs or stock. What is their output compared with the hundreds of thousands of chickens that go "somewhere"? And of the survivors of the chickens that go "somewhere" how many are destined to be the parents of another generation, regardless of what their own parents were or of how they themselves first saw the light? Yet people are astonished when chicks are hard to raise, bad doers, and money losers instead of money makers. It would be astonishing if it were otherwise. Personally I believe that a good half of the poultry diseases of our day are caused by the country being flooded with incubator hatched birds, not of one generation only, but of two, three, four and often more generations old. It can't be done. The only satisfactory reproductive machine in the poultry world

is the one designed and perfected by the Master of even the cleverest craftsman, and we shall be wise if we let it rest at that, so far as our purchases of breeding stock are concerned.

A short time ago I saw over the gate of a pen on a moderately successful poultry farm the following: "The sins of the fathers upon the children, incubator chickens in the third and fourth generations." Inside were creatures which belong to the things that are said to make angels weep. But so long as there is the demand amongst poultry people for quantity first, quality second, they will get just exactly what they ask for; and if things go wrong they can blame nothing but their own folly. For there is good stock to be had; it is not as cheap as the other, but it is the only sort worth buying. A little of it bought at a favorable time (for instance, like the present), handled with judgment, and allowed to increase by natural means, can not fail to be a sound investment and one there will be no cause to regret.

My second reason for discussing the purchase of breeding stock at this time is this: For a long while the cry has been that poultry affairs are at a very low ebb. Well, isn't this just where the tide has got to turn? So don't be alarmed, but get into the business at once, if you have been seriously thinking about it, and let the tide, which must be ready to flow, carry your ship right into the harbor of prosperity. And if the egg tide is very low it means that the capital you want to spend will go an extra long way. It means that stock of the right sort, the sort you must have, is cheap enough to buy. Why shouldn't you have some of it? And feed is reasonable, too. Then why hesitate? This is your opportunity. Get started at once in what, remember, is a staple industry, on the most favorable terms. If you know anything at all about poultry and are willing to learn the rest you need have no fear. Only remember to start with a few really good ones, hen hatched, of course, and then let your business build itself up gradually and naturally. As for the fellow who can't be happy without a crowd, let him have it; he might just as well spend his money in that way as in any other. But be you wary, my friend, and start right anyway.

There are many ways of treating hogs to eradicate lice. The common method is to corner the pigs with two hurdles and apply crude oil by means of an old broom. Kerosene and lard made up in equal proportions also makes a good preparation to be applied in this manner. Sometimes an oil can is used to pour kerosene along the backs of the hogs. This is splendid for killing lice, but it is too active, as it will remove the hair and blister certain parts of the skin.

Queries

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Irrigating Small Fruits

How often should berries and fruit trees be irrigated during the fruiting season? The soil is heavy loam, packing very hard and rock-like if not continuously cultivated.—Subscriber, Alhambra.

So much depends upon the tree and the size of the crop it is carrying, the soil and the subsoil that it is impossible to answer such a question excepting in the most general terms. The rule of irrigation is to give water when it is needed. This is best shown by the condition of the tree, but the soil should never be allowed to pack under any circumstances. This should be prevented by cultivation at the proper time after irrigation or else by heavy mulching. If the trees are irrigated, say once every month or six weeks (and by irrigated we mean so fully supplied with water that the very lowest depth of the roots are reached), then one or two thorough cultivations at the proper time after irrigation should be sufficient. Too many irrigators give only surface irrigation which compacts the surface soil and causes more loss than benefit to the tree. With small fruits, however, it is impossible to carry on most soils near Alhambra unless irrigated at least every week or two. We judge in this case our inquirer irrigated with the hose, and we think that with the small fruits if he would use the irrigation ditch method, then give heavy application of a good mulch, it would be the best way to handle these fruits.

Registering Jerseys

An inquirer recently requested information as to possibility of securing registry for a pure-bred Jersey whose pedigree has been lost or, if this one animal cannot be registered, if she is served only by registered bulls how many generations must elapse before the offspring may be eligible to registry. We answered in effect that that time could never come. However, we referred the question to Secretary R. M. Gow of the A. J. C. C. Secretary Gow writes: "In order to register an animal both its sire and dam must first have been entered in the Herd Register of the A. J. C. C. The breeding of an ineligible Jersey cow to registered bulls would not produce offspring which would be recorded with us. You are therefore correct in your view of the matter as stated to your inquirer."

Re-setting Orange Trees

When should two-year-old orange trees be re-set? I have two small orange trees planted some two years ago. They have had every attention, yet they look exactly as when first set only not so fresh. I now need to move them. Are they worth saving?—Subscriber, Alhambra.

Either March or May is usually preferred as the time for moving trees. Some maintain they can move the orange almost any month in the year but when moved at this time if the new growth which usually follows re-setting should start and we should be given an early frost injury to the trees might result. In the case of the trees referred to, however, which have not grown for two years we question whether we would bother with them at all. There may have been something wrong with the roots and it would not pay to bother with such trees at the present prices of good, thrifty stock.

The construction of the dairy barn may be less important in keeping down the bacterial count of the milk than careful methods in handling milk. Proper construction, however, lightens the labor necessary to keep the barn and its equipment in a clean, sanitary condition.

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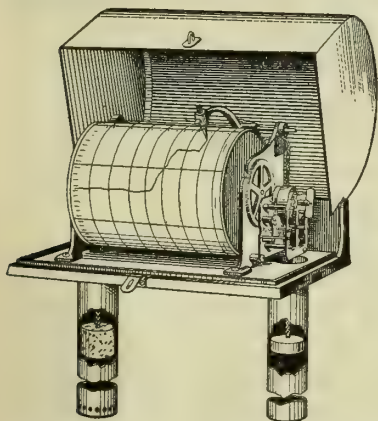
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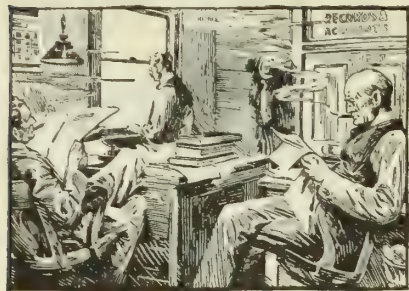
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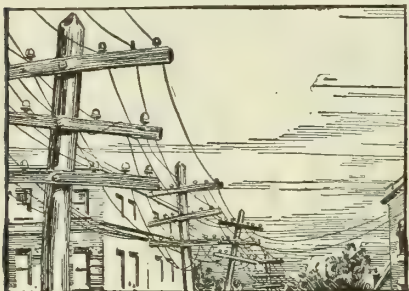
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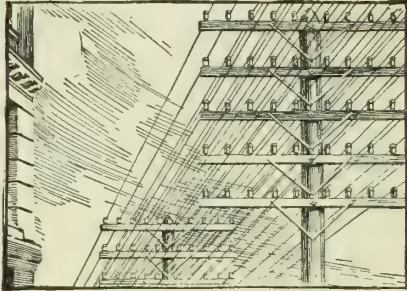
Records kept like this are practically useless for the management of a business. Efficiency is impossible and funds for improvement cannot be obtained.



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The Household Department



THE VETERAN

By Thos. J. Taylor

Ay, sell him, now the old-time fire
Burns feebly in his breast!
Forget the past, the proud desire
To do his level best.
He's willing yet, but sinews fail
When years a number flock;
He'll bring a pittance at the sale,—
Ay, send him to the block!

Forget the day you drove him home,
Lest memory loose a tongue;—
The burst of speed, the flying foam,
The pride of strength unwrung.
No retrospection, if you please,
Pass all that's gone before;
The wine is drunk, who wants the lees?
Go, spurn him from your door!

What matter though his faithful heart
Shall mourn the homely stall?
Why fear his shrinking sides may smart
Beneath the lash's fall?
Pull up the roots and chance the blow,
Waive sentiment, I say;
He's but a chattel, let him go
For what the crowd will pay.

He has no words wherewith to plead,
Did he your purpose rate;
Nor knows the menace of the steed
That paws without the gate.
Hail, then, the young, with life awing!
Let useless age make room—
The King is dead. Long live the King!—
Ay, send him to his doom!

OLD TOM

John Potter mounted the veranda steps with an apprehensive heart. Yet he reassured himself. "Women are such silly sentimentalists in such matters—always letting their sympathies run away with them."

"Better brace up and tell her—the sooner the better."

Mrs. Porter looked up smilingly from her letters which the postman had just left. Her pleasant attitude made his task the harder. But feeling that the dreadful ordeal would give ease to his troubled conscience he sat down and began.

"Now, Doris, you mustn't take on over what I'm about to say. I've sold Old Tom. I hadn't expected to sell the old fellow; I'm sorry already, but I had a chance to get fifteen dollars for him, and if he couldn't have got rid of that cough and rheumatics, even a jockey soon wouldn't have bought him for three."

Porter expected a protest of words, but there was complete silence. The accusing sentence of a court of justice could not have given him a keener torture.

At last, in a strange tone his wife inquired:

"Who bought Old Tom?"

"Tony Menzi."

"That huckster that was around yesterday?"

"Yes."

"Has the man gone?"

"Yes, he started with him for the city at three o'clock this morning."

Then Mrs. Porter "spoke."

"John, I'm going to say something I've never thought, felt, or said before! I'm ashamed of you! You've often made a protest at cruelty in the community, but what have you done but a thoughtless and cruel deed? Tom gave us 20 years' work for nothing but his board. He's hardly ever had a whole week-day of rest. It's

been Tom here and Tom there, always put to do the extra jobs, and trips to town often when he was tired out. And now, just because he was getting old and lame and had a cough, you've sold him to a life of misery and neglect. I thought you despised a traitor. But what else have you been to Old Tom? I wish I could at least have said good-by to him and told him how faithful he has been!"

Porter knew he had the wrong side of the argument, yet he made a spirited defense, saying that farmers were a practical sort and couldn't let "chicken-heartedness" stand in the way of business.

Seeing his words of no effect, a happy thought struck him.

He took out his pocket-book and tossed three five-dollar bills into his wife's lap.

"I heard you talking about a new dress the other—"

But she did not wait for him to finish.

"Do you think I could wear a dress bought with the price of Old Tom? I'd rather wear a three-cent calico!"

Little more was said, but each day at the time Porter had been used to prepare Old Tom's bran mash he had a strange sense of remorse and longing for the faithful old creature, and a feeling of loneliness came over him as he passed the empty stall.

Over a year later, Porter on a business trip, was driving his "machine" through a beautiful section of country several hundred miles from home.

He heard angry shouts and saw a short distance ahead a heavily loaded wagon and a fallen horse.

Something was wrong, and he stopped his auto.

The wagon was twice too heavily loaded for the old horse that evidently had passed from one master to another and had at last become the victim of the jockey and been sold to an ignorant, coarse peddler.

The man had been whipping the horse, but finding that of no use was securing a fence-rail to further beat the old creature.

"Put that club down!" commanded Porter. "What's the trouble?"

The peddler obeyed, pointing angrily to the horse and wagon.

"He notta no good! I pay t'ree dollar! Man cheat. Horse notta no good! I kill him!"

Porter freed the horse from the miserable, ill-fitting harness. A faint neigh of recognition greeted him. It was Old Tom!

"It's the first time John ever forgot," thought Mrs. Porter with a wistful smile as the day passed on to afternoon and no reference was made to her birthday. The pleasing little "surprise" gift that always marked the day was lacking.

She heard voices at the side veranda and going out, was greeted by a sight that filled her eyes with joyful tears. Her birthday gift had not been forgotten! Old Tom's familiar face greeted her—just a shadow of his former self, silent as to the harrowing experiences of the past year, but neighing for joy at the sound of her familiar voice.

Name _____
Street _____
City _____
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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, September 8, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras 26
Firsts 22

CHEESE

Prices to trade, 1 to 2 cents higher:

Arizona Daisies 14½
Arizona Longhorn 17½
California Fresh 13½
Cheddar 20½
Domestic Swiss 20
Eastern Daisy 18½
Eastern Twins 17½
Imported Swiss 40
Longhorn 17½
Oregon Triplets 15½
Tillamook 15½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts 31
Candled 33½
Northern Fresh Extras, f. o. b. S. F. 33½
Other Outside Stock 30

Prices to producers:

Hens, lb. 11½
Roosters, old 9
Broilers, lb. 17
Fryers 14
Roasters, lb. 14
Turkeys 14½
Ducks 12
Geese 11
Squabs, doz. 100

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt. 7.75
Prime Steers 7½
Helfers 6½
Calves, lb. 9½
Sheep—
Ewes, head 4.50
Wethers 5.00
Lambs, head 5.00

POTATOES

Wholesale selling price:

Sweets, yellow, lb. 3
Northern Burbanks 1.15
Shimas 1.30

ONIONS

Wholesale selling price:

Bolling Onions, crate 1.35
Brown, cwt. 1.05
Red, cwt. 1.00
Local Silverskins, lug 50
White Globe, lug 50
Garlic 10
Sets, White and Brown, lb. 10

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz. 1.00
Beets, doz. 30
Beans—
Wax 5½
Limas 3½
Green 5½
Cabbage, sack 70
Carrots, doz. 30
Cauliflower, doz. 1.35
Celery, doz. 40
Chicory, doz. 40
Chives, doz. 1.00
Corn, lug 45
Cucumbers, lug 30
Pickling, lug 1.00
Egg Plant, lb. 3
Escarole, doz. 40
Horseradish, lb. 10
Leeks, doz. 40
Lettuce, doz. 30
Mint, doz. 40
Okra, lb. 4
Onions, Green, bunch 20
Oyster Plant, doz. 40
Parsnips, doz. 35
Peas, Telephone 4
Peppers—
Chili, Green 3
Bells 3½
Rhubarb—
Crimson Winter, box 75
Strawberry 75
Spinach, doz. 20
Squash—
Crookneck, box 35
Hubbard, lb. 1½
Summer, lug 30
Tomatoes—
Lug 20
Turnips 30

FRESH FRUIT

Wholesale selling price:

Apples—
Alexanders 75
Bellflower 90
Gravensteins 90
Skinner's Seedlings 1.00
Bananas, lb. 4
Berries—
Strawberries, tray 75
Blackberries, tray 75
Raspberries, tray 80
Cantaloupes—
Paul Rose, crate 1.00
Pineapple, crate 1.25
Casabas, crate 1.75
Cranberries, lb. 16

Figs—
Calimyrna, box 65
Black 1.00
Grapes—
Black Hamburg, lug 70
Malagas, lug 80
Muscats, lug 75
Concord, 2-3 crate 90
Thompson Seedless, lug 75
Tokay, lug 1.00
Nectarines, lug 1.25
Peaches—
Clings, box 1.00
Freestones, box 75
Elbertas, lb. 1½
Pears, Bartlett, box 1.50
Plums—
Hungarian 1.00
Climax, lug 90
Kelsey 65
Burbank, lug 40
Tragedy, lug 90
Pineapples, lb. 4½
Quinces, lug 50
Sugar Prunes, lug 65
Watermelons, lb. 1

CITRUS FRUIT

Wholesale selling price:
Lemons 1.50
Juice Lemons 1.00
Grapefruit, Seedless 3.00
Limes, basket 1.00
Valencias 4.50

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes, 7½
Apricots 8½
Peaches 5
Pears, lb. 11
Prunes 8

NUTS

Prices named by California Walnut Growers' Association are:
No. 1 16½
Budded Walnuts 20
Jumbos 19
No. 2 12
Culls 9
Almonds, New—
I X L 17
N. P. U. 16½
Drake, Thin Shell 18
Peanuts—
California, Raw 6
Japan 5½
Eastern 7
Chinese 5

HONEY

Wholesale selling price:
Comb, Fancy, Water White 16
White 15
Extracted Water White 8½
White 7
Light Amber 6
Beeswax 25

RICE

Wholesale selling price:
California 4.25
Broken 2.75

BEANS

Wholesale selling price:
Limas 5.35
Bayous 6.00
Lady Washington 5.25
Pinks 4.50
Black Eyes 6.00
Lentils 12.50
Small White 5.00
Garbanzos 7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley Hay 11.00
Wheat Hay 10.00
Tame Oat 12.00
Alfalfa 10.50
Volunteer 5.00
Straw 4.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow 2.20
Corn, White 2.30
Wheat 2.05
Oats, White 1.90
Oats, Hulled 2.25
Egyptian Corn 2.10
Kaoliangs 1.60
Barley Seed 1.50
Barley, Hulled 1.85

Kaffir 1.85
Milo 1.75
Sunflower Seed 7.00

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Bran, Heavy 1.75
Alfalfa Meal 1.15
Alfalfa Molasses, per cwt. 1.20
Beef Scraps 3.00
Beet Pulp 1.20
Cracked Corn, cwt. 2.25
Cracked Wheat, cwt. 2.20
Cotton Seed Meal 1.80
Bone, Green 1.75
Meat Meal 3.00
Charcoal 1.90
Oil Cake Meal 2.50
Fish Meal 3.15
Rolled Barley 1.45
Rolled Oats 1.95
Middlings 2.05
O. & W. Middlings 1.80
Feed Meal 2.30
Scratch Feed 2.10
Oyster Shell 1.15
Scratch Gritlets 2.30

San Francisco Market

SAN FRANCISCO, September 7, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fresh, Extras 28
Prime Firsts 25½
Firsts 24

CHEESE

Wholesaler to retailer.

Oregon Triplets 19½
Young America 11½
California Flats 8
California Cheddar 11½
New York Cheddar 20
Oregon Twins 13

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh, Extras 33½
Select Pullets 28
Hens, lb. 13
Fryers 21
Broilers 22
Roosters—
Young 20
Old 8
Squabs 2.50
Ducks 11
Geese 11
Belgian Hares, lb. 6

LIVE STOCK

San Francisco prices, gross weight:

Steers 4
Cows and Heifers 3
Calves, lb., live wt. 6
Hogs 4
Wethers 6
Ewes 5
Milk Lambs, lb. 7
Shorn stock, ¼ @ 1c less

POTATOES

Wholesale selling price:

Salinas Burbanks, cwt. 1.40
Delta Burbanks, cwt. 60
Sweets, lb. 1¼

ONIONS

Wholesale selling price:

Onions, Cal. Yellow, sack 50
Australian Browns, sack 50
Garlic, new 4

VEGETABLES

Wholesale selling price:

Beans—
String, lb. 2
Limas, lb. 3
Wax, lb. 2
Celery, doz. 25
Corn, sack 50
Cucumbers, lug 25

WEATHER CONDITIONS

For the Week Ending September 4, 1915.

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date
Eureka	.00	.26	.25
Red Bluff	.00	T	.06
Sacramento	.01	.01	.01
San Francisco	.00	.01	.01
San Jose	.04	.04	.05
Fresno	T	T	.00
Independence	.00	.04	.00
San Luis Obispo	.00	.01	.05
Los Angeles	.00	.00	.00
San Diego	T	T	.00

Temperature Data

	Past Week— Maxi- mum	Mini- mum
	66	48
	106	62
	104	54
	78	54
	90	50
	108	60
	98	52
	94	48
	98	60
	86	62

Eggplant, box 40
Okra, box 40
Peppers—
Bell, box 35
Chili, Mexican, lug 25
Rhubarb 75
Squash—
Cream 50
Summer, box 25
Tomatoes, lug 30

FRESH FRUIT

Wholesale selling price:

Apples—
Bellflower 75
Gravenstein 1.00
Bananas, Hawaiian, bunch 75
Blackberries, chest 3.00
Cantaloupes—
Turlock Ponies 75
River 30
Figs, box, single layer, black 65
White, single layer 50
Grapes—
Black 40
Thompson Seedless, crate 75
Tokay, crate 1.00
Muscat, crate 65
Malagas, crate 65
Muskmelons, River, box 75
Huckleberries, lb. 5
Nectarines, Red, crate 50
Peaches 60
Strawberry Frees, lug 65
Pears, Bartlett, wrapped 75
Other varieties, lug 50
Pineapples, doz. 1.00
Plums, crate 65
Prunes, crate 90
Raspberries, chest 6.00
Strawberries, chest 2.00
Watermelons, doz. 1.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, seedless 2.50
Lemons 75
Lemonettes 1.25
Valencias 2.50

DRIED FRUITS

Wholesale Prices are:

PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, ¾ c. All outside sections ¼ c. lower.
Other Fruits, Stand—
50-lb. boxes—
Apricots 6 c 8 c 7½ c 8½ c
Peaches 3½ c 3¾ c 4 c 4½ c
Pears 6 c 7 c 8 c 9½ c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½ c; do, 12-oz., 5c; bulk, 6c; choice seeded, 16-oz., 6¼ c; 12-oz., 5c; bulk, 5½ c; Thompson seedless, No. 1, 16-oz., 7½ c; 12-oz., 6¼ c; 50-lb. cs., 6½ c; Sultanas, 16-oz., 7½ c; 12-oz., 5½ c; 50-lb. cs., 6¼ c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½ c; 3-crown, 5½ c; 4-crown, 5½ c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:

Nonpareil 16
I X L 14
Ne Plus Ultra 13½
Drakes 12
Peanuts—
Unpolished 3½
Polished 4
Shelled, China 5½

BEANS

Wholesale selling price:

Limas 4.80
Pink 3.75
Black Eyes 3.50
Cranberry 4.15
Small White 4.60
Garbanzos 3.50
Large White 4.50
Bayou 4.50
Manchurian Speckled Bayous 4.00
Red Kidney 6.00
Red Mexican 5.40
Red Kidney 5.90
Horse Beans 2.00

HONEY

Wholesale selling price:

Comb, Water White, new 14
Light Amber, new 11
Amber, new 10
Extracted White 6½
Light Amber 3½
Dark Amber 2
Beeswax 25

HOPS

1914

Wholesale selling price:

Sacramento Valley 8
Sonoma-Mendocino 11½
Oregon Clusters 11½

HAY

Under date of September 4, 1915, Scott, Magnier & Miller say:

Receipts of hay for the past week were 5311 tons, the preceding week 4100 tons. This is an immense amount of hay to arrive in one week under ordinary conditions a weak and lower market would be quite natural. Surprising as it may seem,

these arrivals have moved off in fine shape without any congestion whatsoever and without any concessions in prices. This would indicate that consumers are commencing to appreciate the fact that the grain hay crop is decidedly short this season and are laying in their winter supply to a more or less extent, thus taking care of these heavy arrivals. It is generally acknowledged that the alfalfa crop is short this season, which, together with a short grain hay crop, gives every evidence of a prospective firmness to the hay market throughout the year even though there is no abnormal export demand and prices are based solely on local demand. However, as there is much inquiry at the present time for foreign shipment it is hard to predict at this time what the hay market is liable to be throughout the winter and spring months but it is generally conceded that prices will be considerably higher than at the present time. The fields are fast being cleaned up and we do not look for as large receipts on this market from now on. The export trade continues to be normal in quantity, which in itself helps to maintain the market. The alfalfa situation is strong, receipts moving off very freely and at top quotations.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt. bales)	14.00@15.00
No. 1 Wheat or Wheat and Oat	12.00@13.50
No. 2 Wheat or Wheat and Oat	8.50@10.50
Choice Tame Oat	12.00@13.50
Other Tame Oat	9.00@11.00
Wild Oat	7.00@10.00
Alfalfa	10.00@13.00
Stock Hay	5.00@6.00

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.57 1/2 @ 1.60
Barley Feed	1.17 1/2 @ 1.20
Corn, Eastern Yellow	1.79 @ 1.80
Oats, Red, Feed	1.20 @ 1.35
Oats, White, Feed	1.40 @ 1.42 1/2
Millet	2 1/2 @ 3 1/4
Flaxseed	5 @ 5 1/2
Rye	2.00 @ 2.25

FEED STUFF

Wholesale prices:

Alfalfa Meal, car lots	16.50@17.50
Bran, ton	27.50@28.50
Feed Cornmeal	42.00@42.50
Cracked Corn	42.00@42.50
Roller Barley, ton	25.50@26.50
Middlings	32.00@35.00
Shorts	28.50@29.50
Oilcake Meal	36.00@37.50
Cocoanut Oilcake Meal	22.00@23.00

Citrus Fruit Market

LOS ANGELES, September 8, 1915.

Good Valencias are commanding good prices in all markets. Lower grade fruit is still unsought though it is not refused entirely. The Eastern markets are being filled with large quantities of local deciduous fruit. Shipments very light. There is nothing to say as to the lemon market other than that it is simply "in bad."

Shipments

Shipments of oranges to date from Southern California, 31,477 cars, lemons 6203, total 37,680. To same date last season: oranges 35,917, lemons 2673, total 38,595. From Tulare County to date: oranges 5649, lemons 202, total 5851. To same date last season: oranges 5875, lemons 32, total 5907. From northern counties: oranges 630, lemons 2. To same date last season: oranges 404, lemons 5.

NEW YORK, September 7.—Twelve cars Valencias, one mixed car and six cars lemons sold. Market firm, slightly higher on Valencias; lemons doing better on fancy sound stock, unchanged poor stock. Cloudy.

VALENCIAS—	Avg.
Old Mission, xf, Chapman	5.45
Old Mission, fy, Chapman	5.20
Golden Eagle, sd, Chapman	4.70
Lady Rowena, Chapman	3.80
Windermere, Windermere Ranch	4.55
Orchard, National O. Co.	4.90
Standard, National O. Co.	4.40
Aurora, American F. Dis.	4.70
Sappho, American F. Dis.	4.35
Sweet Marie, Upland Foothill G.	4.45
Tricolor, Upland Foothill G.	3.80
Anaheim Supreme, S. T. Ex.	5.50
Moter Colony, S. T. Ex.	4.85
Iris, D. M. Ex.	5.35
Violet, D. M. Ex.	4.95
Jasmine, D. M. Ex.	4.50
Alta Lema, O. K. Ex.	4.60
Red Spray, O. K. Ex.	4.10
Owl, O. K. Ex.	3.75
Las Palmas, S. T. Ex.	3.35
Echo, S. T. Ex.	4.60
Arroyo, S. T. Ex.	3.85
Tournament, S. T. Ex.	3.00
Peasant, A. H. Ex.	3.70
Prairie Chicken, A. H. Ex.	3.50
Dandy, A. H. Ex.	3.15
Autumn Leaf	4.05
Magestor	3.50

War Eyes

Perfect eyesight is one of the requisites of the army recruit. He must be able to see straight in order to shoot straight. In battle or at the work bench, desk or sewing table, good eyes are indispensable. Have you "war eyes" or weak, "tired" eyes? Dr. Isaac Thompson's Eye Water (introduced 19 years after the war of 1776) is both a remedy for weak, inflamed eyes and an ideal eye wash. It's only 25c the bottle at your drug store, or John L. Thompson, Sons & Co., 159 River St., Troy, N. Y. Booklet FREE.

NAVELS—	Avg.
Dandy	\$2.60
VALENCIAS—Halves—	Avg.
Sierra Vista	\$2.05
LEMONS—	Avg.
Limoneira Co., selected (vent)	\$2.85
Loma (vent)	2.35
Pet	2.20
Greyhound	1.80
Dan Patch	1.60
Pony	1.05
Las Fuentes (vent)	2.35
Montecello Valley (vent)	1.60
Housewife	.90
Golden	.70
Crystal	1.65
Maduro	1.10
Grove	.95

ST. LOUIS, September 6.—Three cars sold. Market weak on lemons, steady oranges.

VALENCIAS—	Avg.
Echo, S. T. Ex.	\$4.35
Tournament, S. T. Ex.	3.10
Arroyo, S. T. Ex.	3.75
LEMONS—	Avg.
Hawk, S. A. Ex.	\$.85
Castellamare, O. P. Ex.	1.15
El Modena	.90

PITTSBURGH, September 6.—Three cars sold. Market steady on oranges, depressed lemons.

VALENCIAS—	Avg.
Cowboy, O. R. Ex.	\$3.75
Cowboy, O. R. Ex.	3.60
LEMONS—	Avg.
Hiddendale, E. C. U.	\$.75
Del Diabolo	.70

BOSTON, September 7.—Nine cars sold. Market is unchanged.

VALENCIAS—	Avg.
Brownie Boy	\$2.40
Plymouth, S. T. Ex.	4.35
Mtn. Girl, marked X	3.00
Rev, S. T. Ex.	4.70
Mother Colony, S. T. Ex.	4.20
El Pavo, S. T. Ex.	3.35
Boston, S. T. Ex.	4.80
Mtn. Girl, S. T. Ex.	3.05
Tunnel, S. T. Ex.	4.20
Tunnel, S. T. Ex.	4.10
Balboa, S. T. Ex.	3.95
LEMONS—	Avg.
Green Hussar, O. K. Ex.	\$.90
Owl, O. K. Ex.	.70
Squirrel, A. H. Ex.	1.70
Prairie Chicken, A. H. Ex.	.95
Las Fuentes, C. S. Co.	1.85
Montecito	1.00
Alta Loma, O. K. Ex.	1.45
Green Hussar	.80
Homer, Q. C. Ex.	2.10
Camel	.95

PHILADELPHIA, September 7.—Five cars sold. Market firm on oranges, steady lemons.	
VALENCIAS—	Avg.
Gold Medal, xf, G. O. Groves	\$5.70
Silver Medal, G. O. Groves	4.40
Medal, G. O. Groves	2.80
Carmencita, S. T. Ex.	4.45
Las Palmas, S. T. Ex.	3.25
Gold Medal, fy, G. O. Groves	4.95
Silver Medal	4.25
Medal, marked M	1.65
Colombo, S. T. Ex.	3.90
LEMONS—	Avg.
El Modena, O. R. Ex.	\$1.35
Patio, S. T. Ex.	2.20
Urchin	1.60

CHICAGO, September 7.—Fruit and vegetable markets were pretty thoroughly cleared out before the three-day holiday, but fresh consignments had accumulated today and prices were shaded somewhat. Cantaloupes—Standard cases 45 melons, California, 1.75@2.00 up to 2.50 for fancy stock; pony crates, 1.25@1.50 down to 50 for soft stuff; flat cases, pink meats, California and New Mexico, 1.00@1.15. Casabas—Slow sale; cases California, 1.35@1.50. Apples—Best varieties; barrels, 2.50@3.75. Lemons—Boxes, California, 2.25@3.00. Oranges—Boxes, California Valencias, 4.50@5.00; off sizes, 3.50@4.25. Grapes—Cases 4 baskets, Tokay, 1.50@1.75; Malaga, 1.00@1.25; seedless, 1.15@1.25. Plums—Cases 4 baskets, seven California varieties offered 75@1.00. Pears—Boxes 50 pounds, California Bartlett's, 1.50@2.25 down to 1.25 for overripe; Washington 1.40@1.85.

HOUSEHOLD QUERIES

(Continued from Page 261)

each 100 cucumbers boil six quarts of water with three-quarters of a pound of salt. Allow this to thoroughly cool, after which add seven cups of vinegar, pouring over the prepared jar of cucumbers. On this place a cloth, then a board fitting into the top of the jar (leaving a small space around for the liquid to rise) and weigh it down with a sandstone so that the cucumbers will always remain under the liquid. Place in a moderately warm, dry room. At the end of ten days to two weeks remove the cloth, board and stone, also any scum that they may have gathered, wash carefully, and cover again as before. Usually in 30 days the cucumbers are ready for the table as luscious dill pickles. A four-gallon jar requires two pounds of green dill, though more can be added if the flavor is liked.—Mrs. G. Esterbrook, Los Angeles.

PICKLE RECIPES

Cucumber Pickles

Three quarts cucumbers, one quart small onions. Soak in salt water a day or a night. Wash in cold water. To sufficient vinegar to cover pickles, add two cups brown sugar one-half cup Coleman's mustard, ten cents worth of tumeric and some celery seed if de-

sired, also one peppercorn. Salt to taste. Cook five to ten minutes. Place in jar and completely cover with vinegar. Seal.

Chopped Pickle

Two quarts chopped tomatoes, one head of cabbage chopped, four onions, chopped. Sprinkle with salt and stand over night. In the morning drain and cover with the following:

To sufficient cold vinegar to cover add one teaspoon cinnamon, one-half teaspoon cloves, one-half cup grated horseradish one-fourth cup whole mustard seed, a little cayenne pepper, two chili peppers chopped fine, four sweet peppers, one large cup sugar. Mix well and bottle without cooking.

FARM BUREAUS

(Continued from Page 248)

farm improvement association be formed in that district. A meeting was held on September 9 for the purpose of perfecting the organization.

Blackman, Griffin Company of Ogden, Utah, are in the market for alfalfa seed and want samples from this district. This firm in correspondence with Farm Adviser J. A. Armstrong states it will be glad to receive samples of recleaned or rough seed and will quote prices on either. They furthermore agree to accept and pay for the seed F. O. B. cars. Anyone in-

terested may send samples direct or send them to the farm adviser and he will forward them.

The management of the Bartlett-Heard ranch south of Phoenix has instructed one of their men to spend his entire time applying London Purple to the nests of harvester ants in their fields.

The farm adviser has been told many times that alfalfa would get yellow and stop growing in this valley during August and September on account of the hot weather. This however, is not true. It is true that it gets yellow and stops growing but the hot weather has nothing to do with it. It is caused in some cases by the failure of certain types of land to take water but in the great majority of cases to ravages of insects. The first trouble may be corrected by subsoiling and in the second case if every rancher would keep a flock of turkeys commensurate with his alfalfa acreage he would find that the alfalfa would grow in a very satisfactory manner in our hottest weather.

Several railroads in the southern part of Russia now allow agricultural machines and implements precedence over all other classes of private goods, giving such freight the same privileges of speedy transport as are enjoyed by perishable goods.

A Guaranteed Worm Expeller

GILBERT HESS, M.D., D.V.S.

Worms are responsible for nine-tenths of your hog troubles at all seasons of the year, but especially in the fall. Do not be misled, thinking your hogs have some other ailment. Nine times out of ten their trouble is worms. My Stock Tonic will positively expel these worms and keep your hogs in a healthy condition, thereby enabling them to resist disease and lay on fat. Feed my Stock Tonic to your hogs right now.

Dr. Hess Stock Tonic

Makes Stock Healthy—Expels Worms

25-lb. pail, \$2.25; 100-lb. sack, \$7.00

Why pay the peddler twice my price?

It isn't enough to rid your hogs of worms, mark you. You must also tone them up and put them in such a clean, vigorous condition as to make worm development impossible. That is why my Stock Tonic not only contains vermifuges to expel the worms, but it also has in it tonics, blood builders and laxatives to build up and regulate the animal's system.

My Tonic is highly concentrated, as the small dose quantity will prove, and as I have no horses, wagons and salesmen to pay for, I can sell you at rock-bottom prices through your local dealer.

My Stock Tonic also aids digestion and assimilation, makes your hogs and other stock thrive; it is the result of knowledge which I have acquired as a veterinarian, doctor of medicine and stock raiser. Formula on every package.

So sure am I that Dr. Hess Stock Tonic will keep your stock healthy and expel worms, that I have authorized my dealer in your town to supply you with enough Tonic for all your stock and, if it does not do all I claim, just return the empty packages and get your money back.

25-lb. pail, \$2.25; 100-lb. sack, \$7.00, smaller packages as low as 50c. Send for my free book that tells all about Dr. Hess Stock Tonic.

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid tonic during the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also starts the pullets to laying. Economical to use—a penny's worth is enough for 30 fowl per day. 1 lb. 25c; 3 lbs. 50c; 7 lbs. \$1.00; 25-lb. pail, \$3.00. Guaranteed.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks and dust bath. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 50c. 1 guaranteed.



If you have a sick or injured animal, write me, giving symptoms, and I will send you prescription and letter of advice free of charge. Send 2c stamp for reply.

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It tells you how to feed and what to feed. Of all livestock the hen is the most profitable, but she can't lay eggs unless you feed her the right materials to make eggs with. We have, by analysis, found out just what goes to make eggs—just what elements nature demands for egg producing—just how much of each ingredient is necessary—upon this knowledge we make

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SURELAY is the one egg producing food that you can depend upon every time to give satisfactory results. We tell you honestly just what we put into it and just how we mix it. Every sack has a guaranty printed on it—What's on the Sack is in the Sack, and That's What's in the Egg.

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This Book is free. It will tell you many truths about poultry raising and egg producing that you never knew before. It tells you how you can get the benefit of our profit sharing plan.

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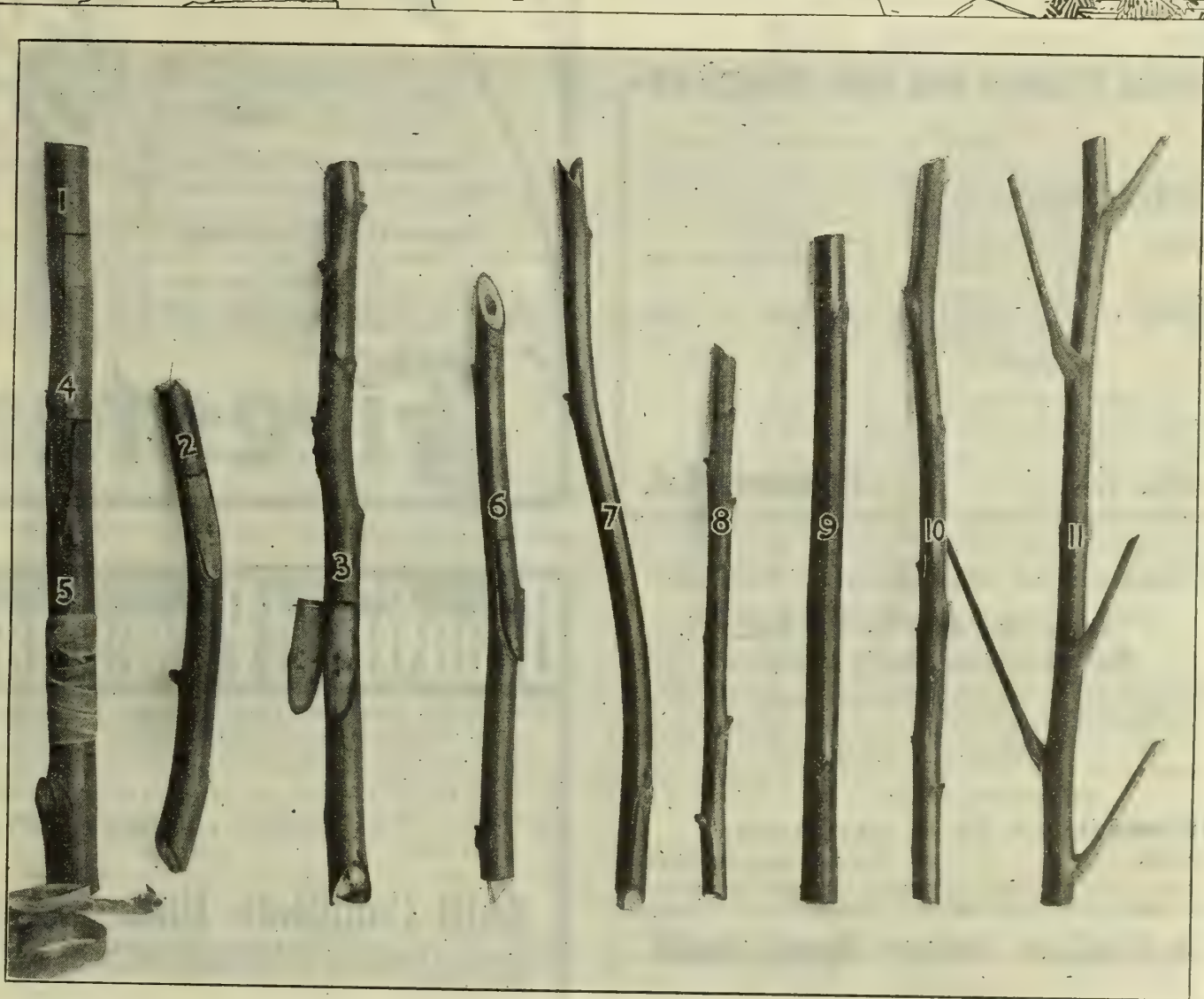
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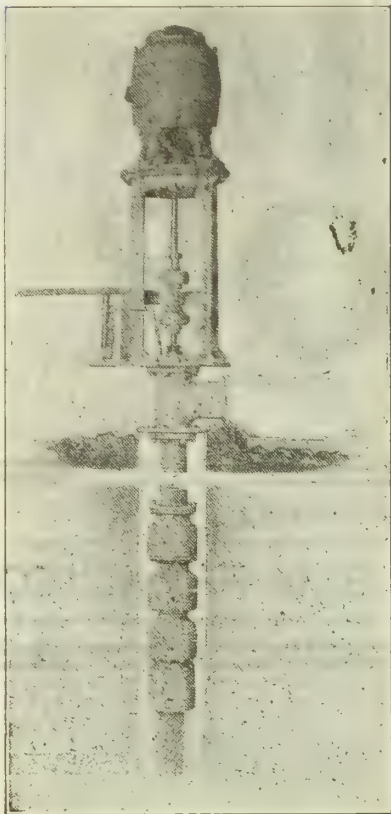
LOS ANGELES

September 16, 1915

SAN FRANCISCO



See Article on Budding Walnuts



Krogh Turbine Pumps and Krogh Irrigation Pumps Were Awarded Gold Medals

by the

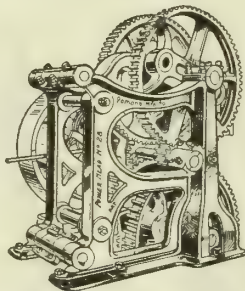
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Just as good for buggy tops, trunks, straps, etc.

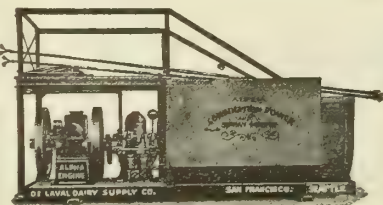
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Extra rubber and fabric,
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Firestone Tire & Rubber Company "America's Largest Exclusive Tire and Rim Makers"

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Firestone Net Prices to Car Owners

	Case Round Tread	Case Non- Skid	Grey Tube	Red Tube
30x3	\$ 9.40	\$10.55	\$2.20	\$2.50
30x3 1/2	11.90	13.35	2.60	2.90
32x3 1/2	13.75	15.40	2.70	3.05
34x4	19.90	22.30	3.90	4.40
34x4 1/2	27.30	30.55	4.80	5.40
36x4 1/2	28.70	32.15	5.00	5.65
37x5	35.55	39.80	5.95	6.70

Firestone

Bean Giant Power Sprayer

The Power Sprayer for Large Orchards. For downright depend-
ability—efficient work—high pressure—ease and economy of opera-
tion—low cost of maintenance—strength—durability—and all
round satisfaction, the Bean Giant is in a class by itself. Supplies
2 to 4 lines of hose and has a capacity of 7 to 12 gallons a minute.
Good for 4 to 8 acres a day.

Thirty years' experience in the building of spray pumps is back
of this outfit.

Built Complete Under One Roof

Every part is produced right here in our own factory—with the exception
of the Novo engine and we use the Novo because we can't build a better
sprayer engine.

TWENTY-ONE DISTINCTIVE FEATURES are incorporated into the
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Cylinders, Rustless Ball Valves, Bean Patented Refiller, Truck with
Rocking Bolster, One-piece Steel Frame, and many others.

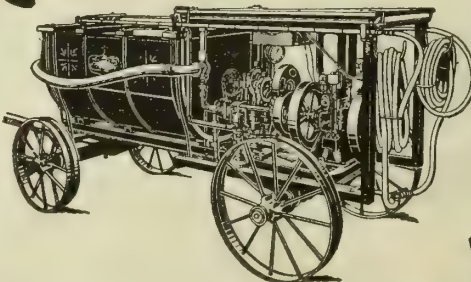
We manufacture a complete line of smaller power sprayers and
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It illustrates and describes
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they are best.

Bean Spray Pump Company

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Agents for So. California
FRUIT GROWERS SUPPLY CO.
Los Angeles
BALFOUR-GUTHRIE CO.
Los Angeles



California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 12

LOS ANGELES: THURSDAY, SEPTEMBER 16, 1915

One Dollar Yearly

Budding the Walnut

Claud D. Tribble Writes for Cultivator Readers Practical Suggestions Which Will Enable Careful Workmen to Bud Walnuts Successfully.

Consult Illustrations on Cover Page While Reading the Article

SPRING budding the walnut has never been a success with us. Our success has been from the first of July till late in October. The method herein described is the one with which we have had most success after having tried all other methods that we could find, including ring and patch budding.

The first requisite is a knife with a medium weight blade, which must be of the very best metal and kept with a perfectly sharp edge at all times.

An ivory tipped handle is not necessary as all the work is done with the blade.

The next necessity is waxed cloth. This is made from a light stout grade of muslin usually costing about 15 cents per yard. This is filled with the very best grade of beeswax to which is added a very small portion of raw linseed oil. The wax is melted and oil added and stirred, then the cloth is dipped in this, the excess of wax pressed out. Then it is rolled in paper to keep from sticking together.

Community Cooperation

HELPING TO MAKE A PROGRESSIVE TOWN

By R. V. Holland

IF you have children to educate, if you are interested in local social or religious affairs, if you own or expect to own a home or other property in your community, a few minutes thought will convince you that it is decidedly to your best interest to patronize your local stores at all times provided investigation proves that you can do so to as good advantage as elsewhere.

I realize that there is a certain class of merchants—and they are still represented in many towns and cities—who will not handle standard products and who expect buyers to pay exorbitant prices for unknown goods on which they can demand wide margins of profit.

This class of "storekeepers," however, represents a comparatively small minority and is fast going the way of the prehistoric dinosaur and the nearly extinct mossback farmer who "don't have to read nothing about farming."

Villages, towns and communities develop in accordance with the amount and quality of effort put forth by their citizenship, and progressive, right-living people have long since learned that it is neither profitable nor pleasant to live in nonprogressive communities. In nearly every locality are fathers and mothers whose sons and daughters have been forced to leave home in order to secure profitable employment that should have been afforded locally.

If you live on a farm you want good roads, schools, churches, telephone service, mail delivery and a convenient market in which to dispose of your products and from which to supply your wants.

If you live in town you want, in addition to the above, good streets and sidewalks, wholesome amusements, those things that go to make a community worth living in.

These advantages are the natural outcome of, and are limited to, the growth and condition of your locality, which is in turn dependent upon the extent of local trade activities.

Did you ever see a really good town that did not have good stores? The two go hand in hand.

I personally know of an instance within the past year where a very wealthy man refused to locate and establish a modern store in a town of some 3000 population for the reason that an investigation developed the fact that the better class of residents adhered to a long-standing policy, or habit, of doing practically all of their buying in the stores of a nearby city or by mail.

On the face of it this town had merely failed to secure a new store. On the other hand think for a minute what this rich, aggressive man, with the up-to-date store he would have put in, embodying his ideas and methods, would have meant to the community. It would have afforded employment for a number of men and women and would have helped to develop new lines of trade. The owner's personal and business taxes would have meant much within themselves.

Bear in mind the fact that home trading is a most vital element in community welfare and progress. Consider carefully the fact that a portion of every dollar spent in local stores finds its way to some essential function for the support and development of the neighborhood, the general prosperity of which you must necessarily share.

Increased local business means the possibility for securing additional modern public conveniences and luxuries, additional trading, educational, religious and social advantages, consequently, increased individual wealth and opportunity.

Your local merchants are entitled to your patronage provided they offer you the right kind of merchandise at the right price, and you owe it to yourself and your community to extend it to them.

The best beeswax costs about 40 cents per pound, and five and one-half pounds will fill about ten yards of muslin. Making the cloth is rather troublesome as one is not usually prepared to make it and to get all the excess wax from it and it is usually better to buy from those using it in large quantities.

To begin with the bark should separate freely from the stock to be budded, and this stock must be in a good growing condition. The bud stick should also separate the bark freely from the wood, and this can be accomplished by immersing the budsticks in water for a few hours.

A slit is made perpendicularly in the bark of the tree or stock and at the top of this slit a cut is made square across the stock, very similar to the budding of deciduous fruits, except the bark is not raised by the motion of the blade, but is separated by the end of the blade. (No. 1 shows slit in bark.) Next the bud stick is taken in the left hand and beginning about an inch below the bud (see No. 2) cut deeply into the wood to an inch above the bud, cut across the top and with this bud stick in same position insert knife under the edge of the bark and with a turning motion of the budstick remove the bark and cut the bud smoothly between wood and bark then pull off the bud. Should the heart of the bud be broken or pulled out it must not be used as it will not grow. No. 2 shows bud removed from budstick. Next take the outer part of the bud between the thumb and forefinger of the left hand hold directly above the incision in the stock and with the knife in the

right hand, place the end of the blade in the incision and with a slight turning motion open the bark and start the bud, then shove into position by placing ball of the thumb of the left hand directly over the bud. Practice will teach the beginner how to keep from breaking the bud during the insertion. No. 4 shows the bud perfectly inserted. Tear a strip of waxed cloth about 20 inches long and from this tear a strip about a quarter of an inch wide, begin at top of bud, wrap over the cut and downward, leaving the bud exposed but all other parts must be wrapped as nearly air tight as possible. The wrapped bud is shown in No. 5. No. 3 shows the bud taken from budstick. No. 6 the bark of bud started to be removed and is ready for cutting the bud from the wood. Nos. 7, 8, 9 and 10 show budsticks with the kinds of buds to be used to assure success. Buds that are raised above the bark, those with a portion of wood extending from the bark and any wrinkled buds that will not fit perfectly against wood of stock will not grow and should not be used. It is absolutely necessary that all parts of the bud fit perfectly flat against the stock and are so wrapped that it will stay in this position till the union takes place.

We cure all our buds used by cutting off the leaves about ten days before used, leaving two or three inches of the leaf stock, which drops off, leaving a perfectly smooth bud. Buds of last season's growth can be used with success, but usually they are not as easily taken off as the present season's growth. No. 11 shows leaves cut for curing buds.

Packers Must Get Together

J. W. Garthwaite of Corona Has Made Careful Observations of Cooperative Packing House Conditions and Finds Great Diversity of Methods

IN course of the recent agitation among citrus men for some reorganization of present selling methods the suggestion was made that a meeting be called at which members of organizations affiliated with the California Fruit Growers' Exchange might discuss the situation.

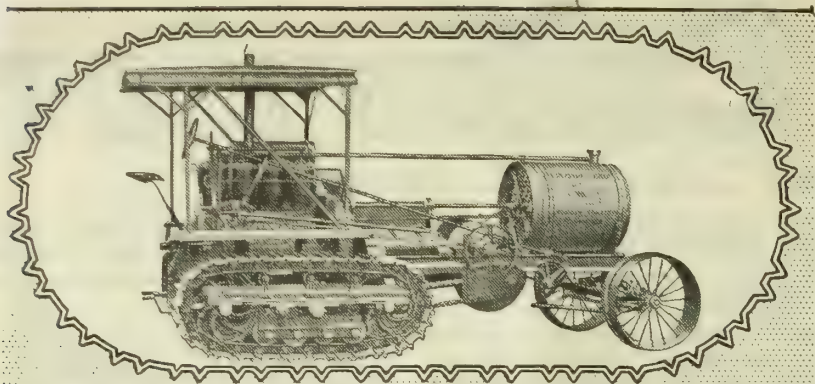
While the primary object was to have been the discussion of marketing it seems that such a meeting would be of even greater value in a general discussion of packing house methods and a comparing of notes as to costs, prices received, quality and quantity of work done and, in short, all of the factors making for economy and efficiency.

The writer is led to make this suggestion by the facts discovered by him recently as chairman of a committee appointed to make a comparison of certain cost items in citrus packing houses in Southern California. The directors in one association had planned to use these figures as a guide in fixing salaries and letting certain contracts for the coming year; but when data from 17 houses in different

sections had been tabulated it was decided that because of the unaccountable variations in amounts paid for similar service in different houses they would be useless for that purpose.

While some variation was noted in all departments it was not so marked in the day wages as in the overhead salaries and was particularly apparent in the office; that is, in the salaries of managers, assistant managers, bookkeepers, assistant bookkeepers, stenographers and clerks. It would seem that there should be a certain minimum below which these expenses should not drop and a certain maximum above which they ought not to rise, and between these two they should depend upon the amount of fruit shipped, the curve of expense per carload dropping slightly as the curve of fruit shipped rises. As a matter of fact the office expense per carload in the 17 houses varies from \$5.63 for the lowest to \$20.40 for the highest with no apparent relation between the fluctuations and the amount shipped. The appended chart makes this point clear.

(Continued on Page 280)



Get Your Crop in on Time with a "Creeping Grip" Tractor

WHY let low, wet spots in your field set you back? Your time is limited—your crop must be started without delay if you want maximum yield when harvest time comes.

Here's the tractor that asks no favors of soft, wet ground. It can pull your plows through any ground that's worth working. The creepers do not sink or pack the soil—they cannot slip and lose power. They creep along over the ground, getting a firm grip and giving you maximum traction with the least weight on the soil, least consumption of fuel, and least wear and tear on the power plant.

The machine rides on steel rails on the endless track. The creepers oscillate over rough spots. Thus the power

plant is carried smoothly, free from jolts and vibration. The frame sets up on 3 points of suspension, which eliminates binding on the bearings.

No other power is as well suited for pulling your plows, harrows, seeders and combined harvesters. Let us tell you how you can cut your present cost of doing this work.

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Built along advices of Horticultural Experts and prominent growers, to do "high pressure" work with wonderful results after fog-sprays and fumigation had failed.

Own your own High Pressure Spray Rig and be in a position to SPRAY WHEN YOU SHOULD. The right time to spray is at period of incubation or hatching of Tree Pests, don't compel yourself to rely on hired spraying or fumigation.

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Sand Pumping

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When writing advertisers, mention The Cultivator.

Exchange Report

Manager G. Harold Powell Presents Report for
Work of the Year Ending September 1st.

(Continued from Last Week)

The California lemon crop increased 132 per cent over the crop of the preceding year. The factors which affect the lemon market differ from those governing the sale of oranges, because the general use of lemons in the summertime depends primarily on climatic conditions. Americans use lemons most freely in cold drinks in hot weather. They use them in a comparatively small way throughout the year for culinary and other general purposes.

Unlike the orange, a low retail price will not greatly stimulate the use of lemons in the summertime. Then temperature is the controlling factor, and if the weather is generally cool, the consumer demand is missing.

The most striking factor in the lemon situation this year has been the abnormally cool weather that has prevailed over the United States since the middle of May. Twice only since the last of April has the average Eastern temperature reached the normal; twice only since the last of May has the Central temperature reached the normal, and at no time since the last of May has the average temperature reached the normal in the Western section of the United States. The wholesale and retail prices of lemons have been unusually low, but neither the jobber or retailer has been able to move the fruit freely because the consumer will not use the lemon as a beverage when the weather is cold.

Other factors besides the cool summer have contributed to the unsatisfactory lemon season. High prices prevailed during the two seasons previous on account of a shortage in the crop, retail prices were high and the use of lemons for culinary and other general purposes, aside from cold drinks, was restricted. When war was declared in 1914, it was generally believed by the trade that imports would be stopped. Wholesale and retail prices rose to abnormal figures in the fall, the trade had no advices of importations and the dealers stocked up for the future with high priced fruit. But imports were not stopped. Italian lemons were shipped here in the usual quantities in the fall. The wholesale price dropped \$3 per box in thirty days but the wholesale and retail trade had large supplies of high-priced foreign and California lemons on hand. These high-priced supplies in the hands of the jobbers and retailers prevented a free distribution of the fruit for many weeks.

The United States has been supplied with the lowest grades of Italian lemons in recent years on account of the usual continental-European markets having been largely cut off by the war. Whenever it was figured that overhead charges could be realized a flood of foreign lemons has resulted. The reduction in the duty of 1 cent per pound in 1912, reduced the overhead charge on foreign fruit 72 cents per box. These factors have resulted in the lowest prices for foreign lemons in New York probably in the history of the importing business. For the year ending June 30, 1910, the average selling price of imported lemons in New York was \$2.90; in 1911, \$3.55; in 1912, \$2.88; in 1913, \$4.38; in 1914, \$3.11, and in 1915, \$2.02 per box. The New York price of foreign lemons

for the fiscal year 1915, which is a leading factor in establishing values throughout the country, is only slightly more than the average cost of producing and placing a box of lemons on the cars in California.

The chaotic condition in the world's lemon trade, the erratic imports, the extremely low prices received for foreign lemons in New York, the cool summer with the resulting lack of consumption, and the general business depression, have been factors beyond the control of the California industry.

In addition to these difficulties the jobbers and retailers have lacked confidence, except in those brands which for years have been handled with skill both in the field and packing house and have thereby established a reputation for keeping quality. At no time in the history of the industry has the advantage of all the details of skillful fruit handling been so strikingly illustrated as in 1915. Some of the California shippers have forwarded their entire crop without loss from decay, with satisfaction to the trade and the consumer and with profit to the producer; while other shippers through lack of equal efficiency in fruit handling have been unable to ship fruit of sound merchandising value or return a profit to the growers.

By-Products Company

The exchange lemon shippers have organized a company to manufacture by-products from the lower grades of fruit. The plant is under construction and the business will be handled on a cooperative basis, the growers receiving the full returns for the by-products after the cost of operation is deducted. From one and one-quarter to one and one-half million dollars worth of lemon oil, citrate of lime and other lemon by-products are imported annually into the United States. These products can be manufactured successfully in California from the lower grades of fruit that are not worth shipping, as well as from fruit that demoralizes the markets because of its inferior quality.

Increasing Consumption of Lemons

There are 20,000 acres of lemons in California four years old or under which will soon come into bearing and will double the supply of domestic lemons. Including the foreign lemons, it will be necessary to increase the lemon consumption in the United States and Canada from 75 to 100 per cent in the next few years. This can only be done by increasing the consumer demand. Production cannot be curtailed because the groves are already planted and the crop can be successfully sold by the grower, the jobber and the retailer only when the consumer demands it. The advertising of Sunkist lemons as a separate campaign from Sunkist orange advertising has been adopted by the board of directors as a basis for the future lemon sales plan. New uses of lemons will be suggested to the public, and the consumer will be educated to the advantages of the lemon as a healthful product, in a greater number of culinary uses, in toilet uses, and in beverages, so that lemons will be used more generally throughout the year. The Sunkist brand will be made synonymous with good lemons in the

minds of the consumers, and that brand will acquire an increasing dominance of the national market through the power of national advertising. The stability of the California lemon industry depends largely on the efforts of the Exchange shippers in increasing the consumer demand. Happily for our growers, the small expense for rational advertising can be added to the cost of marketing and still be lower than the marketing charges of other shippers.

Law Department

The Exchange has a distinct responsibility in its position as one of the largest and most successful cooperative marketing organizations of the United States and in having largely in charge the prosperity and welfare of a great industry. In representing 8000 growers in its business transactions and in its public relationships, its every act must be done without favoritism, without discrimination and with strictest integrity. It must exist as a positive, affirmative force in carrying out the ideals, aspirations and business of its members and must lead rather than follow in its adjustment to public policy. Through the legal department our shippers are fully informed of state and federal legislation, including the provisions of the federal trade commission law, the Clayton act, the food and drug act, and its accompanying departmental regulations, the blue sky law, or investment companies act, and the workmen's compensation act of California, as well as remedial and regulatory legislation in other states.

The Traffic Department

There have been presented to the railroads during the year 11,599 claims, including claims for pilferage, overcharge, and for loss and damage in transit. The claims presented aggregated \$156,506.05. There have been collected and returned to the shippers during the year \$142,004.75. There are practically no old unadjusted claims on the books of the Exchange at the present time, except claims on precooled fruit which are subject to reparation after final consideration by the interstate commerce commission.

Practically all of the loss and damage claims filed during the year are based on freezing in transit. The efforts of the traffic department are directed towards securing better equipment for use in the winter season and such handling as will avoid the loss that results to California from placing on the market inferior fruit frozen in transit.

The traffic department has secured the cooperation of the railroads in the reduction in some of the citrus rates to Northwestern Canadian points, in rates on cull lemons for use in by-product manufacture, on box shock from various Northern California points to citrus territory; and it has cooperated with the Citrus Protective League in securing a more favorable adjustment of demurrage rules and diversion charges proposed by railroads both east and west of Chicago.

Field Department

One year ago the board of directors created a field department. The work of this department has been directed along the following lines: Assisting the associations in improving the methods of fruit handling in the groves and packing houses; improving the equipment and facilities for fruit handling; standardizing the grades and pack, particularly of the advertised brands; increasing and stabilizing the Exchange membership in existing organizations and in developing new associations, cooperating with the Fruit Growers' Supply Company in increasing its usefulness to its members.

Definite progress has been made along all these lines. The field department gave special attention to the de-

cay of navel oranges in February and March. It analyzed the causes of decay and this resulted in an unusual effort by the shippers to overcome the trouble. There was a large amount of scarred fruit in many sections produced by severe winds shortly before the rainy season opened. The frequency of the storms and the length of the rainy season made the proper handling of the fruit difficult and increased the susceptibility of the injured fruit to decay, especially when it was washed. Brown rot was especially prevalent in oranges, and the drying of the washed fruit was difficult with the imperfect drying facilities possessed by the average packing house.

Through the work of the field department, the United States department of agriculture was induced to make a fundamental study of fruit drying with the result that better drying methods are being installed in the packing houses. In addition to better drying processes many vital improvements of a major character will be made in many of the packing houses before the opening of another season.

As a result of the year's work of the field department it is clear that no permanent progress can be made by any association in correcting the details of fruit handling without the proper packing house and field discipline and organization.

Extension of Field Department

During the year the board of directors has recognized the need for greater cooperation between the Exchange and the associations of growers and has enlarged the field department. In the future the central exchange will cooperate with the local associations in making the Sunkist brand still more valuable to our growers. The Exchange recognizes that the strength of the organization depends primarily on the efficiency of the local associations of growers. It has responded to the demand from its members that the central organization cooperate with the local units in building up the highest possible efficiency in fruit handling and in grading.

Fruit Growers' Supply Company

The Fruit Growers' Supply Company has transacted a business of \$3,300,000 for its members. The value of packing house materials supplied the associations will equal approximately \$2,440,000, or \$400,000 in excess of last year, while orchard supplies, on account of the elimination of the oil and orchard heater business, will be correspondingly reduced. The total number of orders handled for the members will show an increase of approximately five per cent over the preceding year, while the operating cost of the supply company will show a slight decrease, the total cost of operation amounting to less than two-thirds of one per cent on each dollar of business transacted.

The amount of material furnished the Exchange members through the supply company may be judged by reference to a few representative articles. It has furnished 12,000,000 boxes, or 2100 carloads of box shock; 16,500 kegs of nails; \$236,675 worth of fertilizers; 1,500,000 pounds of cyanide of sodium; 420,000 pounds of cover crop seed.

Increasing Demand for Oranges and Lemons

The orange and lemon crops of California have increased from five to 20 per cent or more annually for many years; the lemon shipments during the present year are three times as large as two years ago, and twice as large as last year. Population increases on the average two per cent annually, but production continues to increase without reference to demand and without relation to the increase in population. In addition to 20,000 acres of lemons, there are 21,000 acres of Valencia oranges and 43,500 acres of the Washington Navel variety, four years old or under, which, in the next few years, will double the lemon and Valencia crops and increase the Washington Navel shipments.

The problem of the Exchange, therefore, is to create a larger consumer demand and then to increase the efficiency of our sales efforts with the jobbers and retailers so that our oranges and lemons may be widely

distributed and placed in the consumer's hands at reasonable prices. We cannot curtail production. We must sell whatever our growers bring forth. Our sales efforts must be broad enough to move the crop under adverse, as well as under normal conditions. The Exchange, in having the stability of the industry largely in its charge, has no alternative. Through a national campaign of education it must continue its efforts to increase the consumer demand rapidly enough to keep pace with production. If we can increase the consumer demand, the problems of wholesale and retail distribution that confront the industry in California and in Florida, are solvable; if consumer demand is not increased commensurate with increased production, no sales efforts on the part of the Exchange or any other shipper, the jobber or the retailer can move the crop at satisfactory prices.

Advertising of the Exchange

The Exchange is therefore gradually extending consumer advertising as the basis of its future sales plans. It has already obtained tangible results from advertising. The Sunkist brand of oranges and lemons is attaining dominance of the national market. "Sunkist" has become a household word wherever citrus fruits are used; the present satisfactory condition of the Valencia market seems due in part to advertising, and, it is not unlikely that the condition of the citrus industry last winter would have been depressed equally with other fruits and vegetables had not our sales efforts with the jobbers and retailers been strongly supplemented by consumer advertising.

We must not expect advertising, like the magician's wand, to suddenly transform selling conditions. Foods are bought and used largely by habit, and it takes time as well as strong and patient effort, to change culinary or buying habits.

Our advertising policy, therefore, must be firm and consistent, and with a firm and consistent policy we may reasonably expect to accomplish three things:

Increase demand rapidly enough that it may keep pace more evenly with the increasing production. New uses for oranges and lemons can be established; the healthfulness and delicious eating qualities of the products may be emphasized, and the per capita consumption of present users can be materially increased. The latent capacity of 100,000,000 people to consume oranges and lemons is vast, but persistent education is necessary to develop it. This the Exchange must do. No other organization is attempting

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With Bigger PROFITS**



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It is especially successful for prunes, pears, cherries, apricots and all varieties of grapes.

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From a Grape Grower:—I used your Gaviota Fertilizer and the results have been very satisfactory. The yield is much heavier and the quality of the grapes greatly superior to anything I ever raised before, and the growth of the vine satisfactory in every way.

We have hundreds of letters similar to these.

We have a sworn statement to the effect that Gaviota Fertilizer increased a grower's yearly profits from \$2500 to \$9528—another that it increased the production of a ranch so that it could be sold at a profit of \$4500.

We want you to learn about Gaviota and how you can increase your yield. So write today for a free copy of our valuable book, "The Care and Feeding of Crops." In order that your trees can produce the best fruit in paying quantities you must properly feed the soil—You cannot take out of the soil what is not in the soil.

To find out just what your soil needs to produce bigger profits, you should take advantage of our free service bureau. Write and let us know exactly the conditions you are working under—send us a sample of the soil, without obligation to you, we will tell you honestly what you should do and what you need to improve your crops.

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to meet the future problems of the industry.

Place the market for lemons as well as for oranges more nearly on a year around basis. General uses of lemons can be suggested and the public as well as the trade can be educated to the advantages of the Valencia orange for a summer fruit.

Make our Sunkist brand synonymous with good oranges and lemons in the minds of the consumer and secure for that brand a still greater dominance of the national market than it already possesses.

The advertising policy of the Exchange which is directed towards these three ends will establish orange and lemon merchandizing upon a solid foundation that will mean much for the permanency and prosperity of the industry.

Cooperation with Jobber and Retailer

In addition to our national advertising the Exchange is extending its selling agencies so as to push the fruit out to the consumer wherever new markets can be developed. Our fruit is produced by 8,000 growers. It must be consumed by 100 million people. The channels through which it reaches the consumer are first: The California Fruit Growers' Exchange; second, the railroads; third, the 2500 fruit jobbers who, through 7500 traveling salesmen, are continually pushing the fruit into every outlying district and by other methods of salesmanship; fourth, the 300,000 retail merchants who deliver the fruit to 100,000,000 consumers who are located on the average 2,000 miles away from our growers.

No one of these factors is unimportant in the chain of distribution. The jobbers perform a distinct function in assembling the fruit in the distributing centers, in storing, financing and distributing our product to the retailer; and the retailer pushes it out through countless fruit stands, push carts, grocery stores, chain stores and fruit stores to the consumer. These functions must be performed by someone and the jobber or retailer who dis-

tributes his overhead charge over a group of products can do it more economically than the producer, who would found a wholesale distributing system on a single perishable crop that is variable in supply and condition and subject to climatic disaster. The jobbers are desirable in our distributing chain as long as they present the goods properly to the retailer, at a reasonable margin and under conditions that do not curtail consumption.

The Exchange has investigated and is still studying the fruit jobbing business in every part of the country. It is cooperating with the jobber through dealer helps and in other ways to make the widest possible distribution of our product and to place it in the hands of the retailer at a reasonable overhead cost.

The Exchange is also studying the methods of the retail fruit dealers with a view to developing the widest possible distribution at a reasonable cost for the service performed for the consumer. It is cooperating with the progressive retail dealers through dealer-service work in developing the most attractive methods of displaying fruit before the consumer. These efforts supplement our advertising, and meet with the universal cooperation of the trade. They result in a greater interest in oranges and lemons and an increased demand for the Sunkist brand.

The Exchange cannot perform the function of the jobber or of the retailer as efficiently or as economically as it is now performed. To increase the expense necessary to distribute the citrus fruit crop to 300,000 retailers or to 100,000,000 people and to perform the services which are demanded of each would be destructive to the interests of the grower. The problem of the Exchange is to increase the consumer demand for our product through national publicity, to broaden our national selling agency and to cooperate with the jobbers and retailers so that the demand of the consumer for oranges and lemons may be efficiently and economically served.

Deciduous

Fruits

WALNUT CULLS DUE TO THE CODLING MOTH

Written for California Cultivator
By J. G. Berneike

FOUR seasons ago my attention was first directed to this new walnut pest of ours when one of our growers reported that he found worms in some of his walnuts. I could then learn of only one or two others who had made a similar find. The following season I watched closely in my own orchard and found a few nuts attacked by worms. The next season, 1914, I found them especially under two trees not adjoining. And this season I find them scattered throughout the orchard and in appreciable numbers. These worms are now known as the larvae of the walnut codling moth.

Mr. Beers has published some observations made on them in Santa Barbara County. To these observations I will add my own.

The eggs seem to be preferably laid at the stem end of the nut, and clusters are preferred, or else the hatching of the eggs proves more favorable here. The larva begins to eat its way through the hull, always working toward the stem end. When it reaches this it eats through the soft stem tissue into the nut, leaving a little hole here which is often the only sign by which a worm infested nut may be known. Most of the nuts however show a black stain on the shell where the larva has been working. This

black stain is probably due to an oxidation of the walnut hull juice, like that which stains the pickers' hands. If such a nut be opened the first thought is: How could such a large larva leave so small a hole? We need only to remember that it was small when it first got in. The damage to the meat at the time of harvesting does not seem to be very great. How much it may increase I am not aware of. In lifting a sound nut and a wormy nut no difference is detected in weight.

To find a clean-cut worm hole through the shell is very rare. If on opening the nut the larva is no longer found, it will be noticed that the hole at the stem end is larger, accommodating the larger grown larva which has made its escape. Growers and packers will realize the difficulty presented in culling when the only sign is the small hole at the stem end. This is large enough to admit the bleaching fluid which will turn the meat rancid and probably kill the larva. Such a nut, if sent to market, will spoil the reputation of California walnuts, whence arises the imperative necessity of doing the most painstaking culling.

What relative this moth is to the codling moth attacking pears and apples others can tell better than I. It does not seem to me, however, that this moth attacking the walnut finds in it its preferred host. It will require further observation to learn more of its habit and how to prevent damage to walnuts. A moth trap might commend itself.

MORE COOPERATION

Written for California Cultivator
By Jay Dutter

At an adjourned meeting of the San Jacinto Valley Deciduous Fruit Growers in Hemet, Saturday evening, September 5, a report of an investigation committee composed of two of the local growers, Messrs. Jay Dutter and Edward Schmidt, great enthusiasm was aroused for the movement that has begun among growers toward the cooperative processing and selling of their produce.

Mr. Dutter and Mr. Schmidt covered over two-thirds of the state on their investigating trip in an automobile and made a thorough study of the problem; a great deal of their investigation was of the working of the California Fruit Growers' Association, with headquarters at Tulare, which is a strictly cooperative association, formed by a number of local canneries purely as selling association patterned along the lines of the citrus and raisin growers' associations, but is mainly for the handling of canned and dried fruits of all kinds.

Their plans are to establish markets throughout the East, or wherever there may be a demand for their product, and distribute it through warehouse men and direct to the retailer; experiments along this line of selling have been made last year with highly satisfactory results and notwithstanding the fact that this is an exceptionally bad year, the results so far have been very promising.

A movement of this kind means that the more members or local canneries are in the organization the greater will be the success. A number of localities over the state who have heard of the workings of this organization are clamoring for admission to the association, and the central office is swamped with requests for the manager to come and organize them and bring them into the fold, and this is

being done as rapidly as possible with the busy season of packing on and the markets to look after.

The Hemet and San Jacinto Valley growers, after the report of the committee, appointed a committee of seven members to solicit subscriptions for membership, and organization will be effected as rapidly as possible in the hope that the association will be able to handle some of the olive crop this fall.

It is certainly time that the grower of fruit in California realized the full benefits of his labor. The disastrous prices received this year have awakened him to the fact that the grower himself is the only one who is capable of going out and establishing a market and placing his products on the market at a price which the consumer can afford to take for his whole crop rather than to take a small part of it at a high price, of which the grower gets little and has to let the rest rot on the ground for lack of selling facilities or lack of a way to handle or market it.

If the growers are wise they will give this matter immediate attention and get into the van of this movement and secure the benefits of co-operation. Some of the best financiers on the coast have endorsed and emphasized the need of this work and state that with the enormous acreage coming into bearing soon this is the only solution of the market problem; and the banker knows, as he has made a study of it and loans the money to handle the crop.

A FAIR FOR FARMERS

Right along the line of one of the "Agricultural Notes" in the California Cultivator of August 26, "Fairs for Farmers, Not Fakers," I believe you'll be interested to know that the management of the Riverside District Fair is working out a genuine educational program.

We agree that a certain amount of pleasure and a diversity of recreation is necessary, and with this end in view the very best of amusement features have been contracted for. But of paramount importance to the ranchers of Southern California are the demonstrations and practical talks which are being arranged for each forenoon of the fair week, October 5 to 9. Experts from the state agricultural college and men of practical experience will appear on the most novel and really worth-while program ever incorporated in the events of an agricultural fair. Details regarding the subjects to be presented and the men who will bring to the ranchers of the Southland the best methods and keenest ideas of modern farming will be announced within ten days or two weeks.

MILLIONS FROM WALNUTS

Many a nut sundae in ice cream parlors and at the soda fountains throughout the length and breadth of the land is eaten with a greater relish by reason of the fact that English walnuts form an important part of the attractive refreshment. It is also safe to say that many who enjoy the nuts will not know that they have probably crossed the continent in order to be included in the concoction. California, however, in addition to its many other products, is in the front ranks as a producer of English walnuts. In fact this crop runs annually in the neighborhood of 20 to 25 million pounds in the Golden State alone, and of this immense amount one county, Orange, produces some 40 per cent. One of the principal walnut-producing countries abroad is France, and when the crop there fails the price of the American-grown product naturally advances.

A most careful selection of soil and climatic conditions is necessary on the part of the walnut grower. The trees require a deep, rich soil, and the cli-

mate must not be too hot nor too wet. For this reason the walnut-producing area is comparatively limited, both in this country and Europe.

Before walnuts reach the market they go through a most careful process of sorting and drying, after being brought from the orchards, and those which are to be bleached have to receive especially close attention, as a variation of even one cent a pound on a large output would mean a difference of hundreds of dollars in the total income of the orchard owner. An orchard may produce higher than a ton of walnuts to the acre, and a careless overseer might entail serious loss on his employer by neglecting the crop during its drying period. Some orchards in California have been known to render an income of \$350 an acre. In exceptionally good orchards one can sometimes see single twigs with eight to ten fully developed walnuts on them.

California now sends walnuts to every state in the Union, and that this one crop is a most important one can easily be figured by computing the value of its output at prices ranging from 14 to 18 cents a pound, bringing its money value to three or four million dollars a year.

Walnuts are gathered during September and October, generally, but it is some months later before the packing houses are cleared of them. Many a Christmas stocking will undoubtedly have some of the California walnuts to augment the striped candy canes, the jumping-jacks and the dolls.—Allen Henry Wright in the International Confectioner (New York.)

Make your arrangements now for the fall garden. Select the land and keep it in excellent condition till planting time. By doing this you may make it a reservoir to store moisture for the use of plants later on. The secret of success with a fall garden is early and satisfactory preparation.

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Farm Bureaus

Alameda County, C. W. Rubel, Adviser, Hayward

Irvington, Tuesday, September 21.
Centerville, Friday, September 24.
Newark, Monday, September 27.
Niles, Wednesday, September 29.

The farm bureau is still laying stress upon the use of cover crops in the orchards, especially in the southern end of the county. Common vetch has in general proven the most satisfactory, and several orchards will put in demonstrations using vetch this fall. Some that can be irrigated will be sown early this month.

The farm bureau is also taking up the use of lime and is arranging to secure sugar house lime from the Alameda Sugar plant at Alvarado and distribute it to the various parts of the county.

The Livermore Center is arranging for a Land Products Show together with a poultry show and a horse show to be held on Saturday, October 9. A great deal of interest is being shown in this scheme to demonstrate the productivity of the Livermore Valley.

Solano County, J. W. Mills, Adviser, Fairfield

The meetings of the Solano County farm bureau will take place as follows:

Cordelia, September 16.
Vacaville, September 21.
Dixon, September 23.
Benicia, September 28.

There will be no meeting at Rio Vista this month except as the local Rio Vista farm bureau unit may call after the celebration on the 9th.

Napa County

The Napa-Sonoma Cow-Testing Association, with more than 900 cows signed up, will commence work September 15. The herds in this association are located in three counties but they are all within 25 miles of Napa. One hundred and seventy are located in Solano County, near Vallejo, 300 in the Sonoma Valley and adjoining hills and the remainder in the Napa Valley. Of the total number 370 are in herds selling whole milk.

A new line of work is being undertaken in this association. During the first month, September 15 to October 15, the tester will test such herds as wish it for tuberculosis by the intradermal method, in place of the regular butterfat and milk test. The whole purpose of this part of the work is to acquaint the dairyman with the tuberculosis test that he may take measures to eliminate the disease. The owners of several hundred cows have already indicated their purpose of taking advantage of this opportunity. The only additional cost will be the wholesale price of the tuberculin.

The feeding conditions in this territory are exceedingly varied, running from home-grown alfalfa hay and corn silage in the valley to nothing but range on the hills with almost continuous concentrated feeding. Some dairymen make grain hay the basis of their winter feeding, others alfalfa.

The butterfat records will doubtless show what is now the most profitable feeding practice for these different conditions.

Mr. Hugh Assetstin of Humboldt County, a graduate of the farm school at Davis, and formerly engaged in official testing has been chosen as tester for the coming year.—Paul J. Dougherty, Assistant Farm Adviser.

Arizona Farm Improvement Association

Increased activities in all parts of the state among the farmers marked the past month. This condition of affairs promises to be still further accelerated by the appointment of two or three new farm advisers to be placed in different parts of the state.

Local F. I. A. No. 21 has been recently organized at Mesa. The officers of this association are: Elijah Allen, President; W. W. Carney, Vice President; Bert Wingar, Secretary-Treasurer.

At Douglas on August 27 the Cochise-Santa Cruz County Farm Improvement Association was organized. Temporary officers were elected: B. O. Payne, Chairman, and Guy B. Sisson, San Simon, Secretary. The next meeting of the advisory council of this association will be held at Cochise on September 18, when constitution and by-laws will be adopted and permanent officers elected.

The F. I. A. at Casa Grande is starting a movement in cooperation with the other F. I. A.'s in the valley to purchase a carload of wire fence, and is considering the establishment of a cooperative store.

The Gadsden F. I. A. is making plans for the starting of a cannery.

Whitewater, Webb, Bisbee—The Farmers' Societies of Equity which affiliate with the A. F. I. A. are shipping a carload of melons and other vegetables to Douglas and Bisbee daily.

Wellton.—The F. I. A. is planning to buy a first-class stallion some time in the near future.

Plans are on foot for the second annual San Simon Fair. The other day the members of the F. I. A. turned out and spent two days repairing one of the main roads.

The secretary suggests that it would be an excellent plan for each local F. I. A. to prepare an exhibit to send to the state fair to be shown as its own exhibit, properly labeled.

Maricopa County, Arizona, James A. Armstrong, Adviser, Phoenix

Pendergast School District, Thursday, September 16, 8 P. M., Livestock Specialist C. W. Barnes of the University of Arizona will be present to give an address on calf feeding. Prof. S. F. Morse may be present and Farm Adviser J. A. Armstrong will tell how to make alfalfa grow during the hot weather.

Higley Board of Trade, Friday, September 7, 8 P. M. The subject will be, exhibits for the state fair, and the growing of small grains under dry farming conditions. A report on bird control is expected. Suggested treatments by the farm adviser are now being tried.

Laveen Literary Society, Friday, September 24, 8 P. M., Farm Adviser Armstrong will tell why alfalfa does not grow well in August and September and what to do about it.

"AVOCADO-AHUACATE"

By Henry S. Gane, Santa Barbara

The article, "Avocado-Ahuacate," by Mr. Hart, in your issue of August 26, contains, to me, a most surprising statement, "So far as our experience has shown we are producing a fruit superior to that of Florida," and further, "if the California growers persist it will not be long before the name ahuate will mean an unusually good alligator pear and the name avocado a second class product."

In a recent six months' sojourn in Florida after an absence of 13 years in California it was with much interest that the writer compared Florida fruit with California, as well as the methods of growing and marketing the same. The one most striking feature was the great superiority of the Florida avocado over the California ahuate. Alligator pears are preferred by me over all other things to eat, and I rarely ever neglect an opportunity to procure them. Of course my personal taste may be at fault, but I am absolutely positive that nine people in ten would much prefer this fruit as offered for sale over a large area of Florida during, say, the fall of the year, over that offered for sale to the public in California. I cannot of course state that California does not or cannot raise fruit equal to that of Florida, merely that I have never seen it offered for sale. The retail price in Florida over a number of months and a large territory was uniformly ten cents a piece.

As far as using the term ahuate as a trademark is concerned, with the idea expressed by Mr. Hart, I would mildly suggest that it might prove a boomerang, and in educating the public to its use we might begin with the "Cultivator," for in the very issue mentioned the Los Angeles market quotations are given under the "provincial" term of avocado.

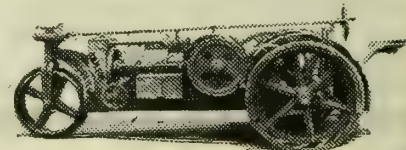
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We believe Mr. Hart's reasons for writing as he did regarding the Florida fruit is that analyses which were made of such Florida samples as could be secured ran exceedingly low in oils and nutrients. These analyses appear in Bulletin 254, recently issued by the state university, and were made by Professor Jaffa.—Editor.

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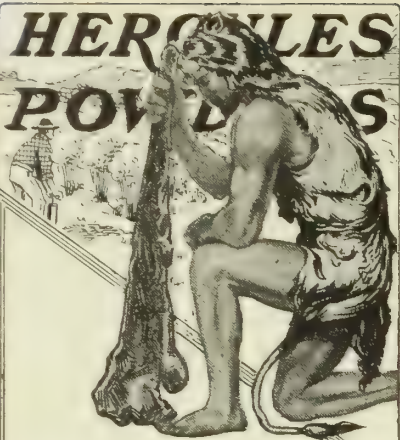
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Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Softening Water

I have recently moved to this place and have a new well with a good supply of water which I find is extremely hard. What may I use to soften for household or laundry purposes?—Subscriber, Concord.

Hardness, the property of water which causes it to form an insoluble curd with soap rather than give a frothy lather, is due largely to the presence of lime and magnesia, usually in the form of bicarbonates and sulphates. To express it technically, water having more than 250 parts per million of hardness producing constituents is inconvenient for washing purposes although much harder waters may be used for drinking. These injurious substances may be eliminated or neutralized by the addition of soda ash or carbonate of soda, about one pound of soda ash of 78 per cent strength or one and a half pounds of 56 per cent strength are required to each 1000 gallons of water. In addition borax is used to a large extent for this purpose and it is to be preferred for toilet purposes because it has a less injurious effect upon the skin. One or two tablespoons in the bath is usually sufficient. In addition it is suggested that the juice of a lemon to the bath water will neutralize these injurious substances.

Garden Questions

I would like to obtain some information on a few subjects pertaining to the floral and fruit departments of gardening. You gave me a great deal of aid on other things in the past.

I have a gravel driveway that is not in use now and decided to plant flowers in it. Had it plowed up and hauled a quantity of fertilizer, planting the driveway full of Shasta daisies. This year the daisies blossomed abundantly for a few weeks, then grew small, finally ceased blooming. The ground is kept well watered and cultivated, yet it will bake hard in spite of all, on account of so much gravel. As the daisy bed now presents a forlorn appearance, I wondered if I could not plant a succession of blossoming plants as follows: One row of calla lilies for spring blossoms, a row of daisies and a row of the beautiful red and golden lilies that blossom later in the summer, alternating the rows until the entire bed is taken up. Yet I do not know whether the lilies will thrive in this bed. I would appreciate any suggestions for an ever blossoming bed, also if you can tell me how to treat the gravel bed in order to prevent the baked surface. One cannot cultivate every day, yet this must be done in order to keep the plants flourishing.

I am obliged to move some four-year-old roses. At what time of the year shall I move them? Shall I prune them first? Will the moving interfere with the spring blossoms? When is the best time to prune roses?—Subscriber, Alhambra.

Four-year-old roses that are to be moved should be left entirely without water for at least two months before moving; three would be better still. Prune at time of moving and move with bare roots but shift them quickly and water as soon as replanted. If they are already partially dried from lack of water they may be moved at any time now. The moving will not interfere with spring bloom; on the

contrary they will bloom all the better for it. The best time to prune roses is a long and complex story as so much depends on treatment, also the pruning is governed by time of first heavy rains. We will publish something on the subject soon. The pruning season as a whole ranges from September to March.

Your scheme for flower bed will be fairly successful. It will not do for another to arbitrarily outline a succession for it would contain probably, flowers you would not like. Plant as you propose and study the problem if a gap occurs in the succession of blooms. After planting mulch well with stable manure and do not cultivate. No baked surface is then possible.

Percentage of Eggs

Will you kindly give me the proper percentage of eggs per day to expect from Leghorn hens under normal conditions with proper feed during their different laying years?—Subscriber, Santa Ana.

I do not know that such a table has ever been worked out and it has cer-

tainly not been worked out for California conditions. Tables of average egg yield for the various months have been made at the Maine, Kansas, Arkansas and Australian experiment stations, but they seem to be for the first year only. That of the Australian station, where the climate most nearly resembles that of California, is as follows: January 51 per cent, February 66, March 67, April 61, May 53, June 45, July 43, August 41, September 29, October 31, November 31, December 40. Probably these figures would be a little high for California, for Australian hens are exceptional layers, and the conditions surrounding them at the egg-laying contests were extremely favorable.

That it would be very difficult to arrive at satisfactory averages for hens in their second and third year is shown by the record made by four hens at the Cornell station. Lady Cornell, the best layer of the four, laid 257 eggs in her first year, 200 in her second and 191 in her third. Madam Cornell laid 245 in her first year, 131 in her second and 163 in her third. Cornell Surprise laid 180 in her first, 186 in her second and 196 in her third. Cornell Supreme laid 242 in her first, 198 in her second and 220 in her third. The surprising thing is that three of these hens actually laid more eggs in their third year than in their second, and one laid more in the third year than in the first. As long as it re-

mains the custom to trapnest hens only in their first year we shall not know much about the laying of old hens. We do know, however, that many Leghorns lay nearly as well the second year as they do the first and (Continued on Page 283)

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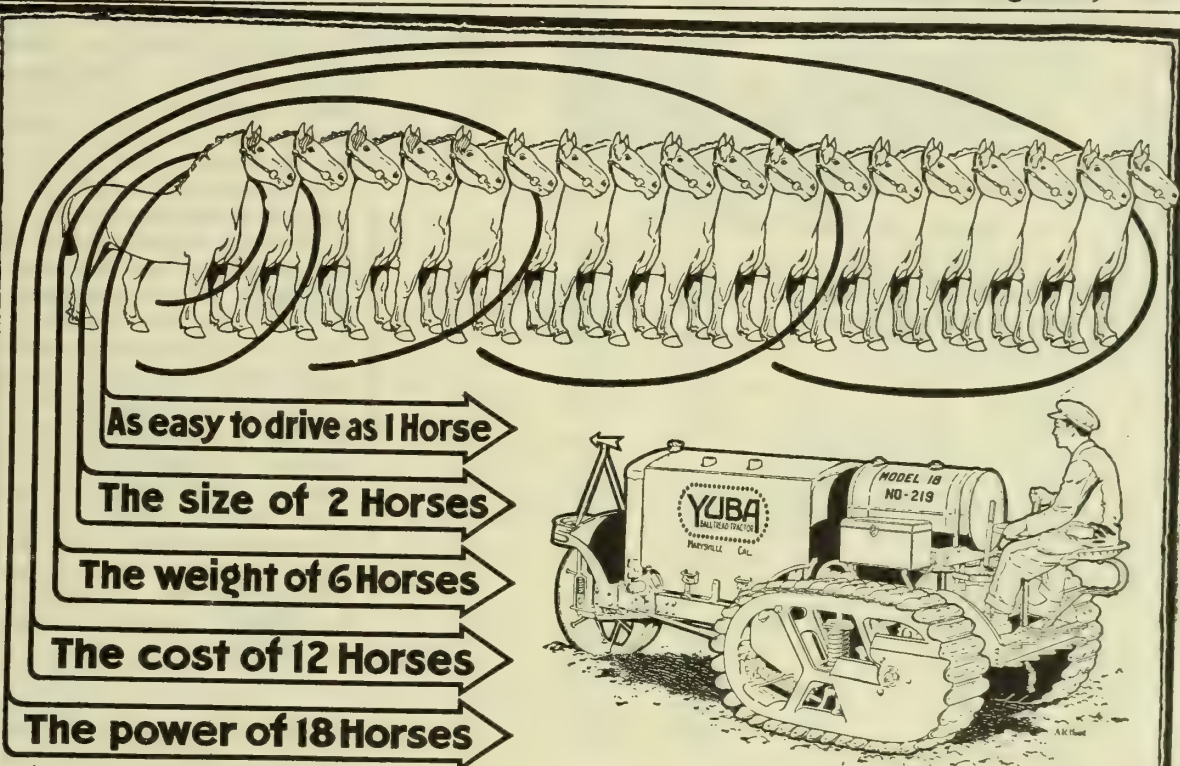
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Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Encyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Encyclopedia. Write us about it.

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General Agriculture



SEED POTATOES

By W. V. Shear, United States Department of Agriculture, Before State Fruit Growers' Convention

DURING the past decade a gradually increasing emphasis has been placed upon the importance of good farm seeds of all kinds. Improved strains of wheat, oats, barley, corn, alfalfa and other farm crops have been produced. Not only is the particular strain considered of great importance, but also the vitality and powers of germination are tested. Where formerly much emphasis was placed upon cultural methods and ways and means for the destruction of weeds and other crop pests, the thought of the farmer is being directed more strongly toward the production and use of better seed. And justly so. In the chain of factors which go to produce a large crop of any kind the factor of good seed can hardly be overestimated. Practically as much expense is put into the plowing, harrowing, cultivating, irrigating, hoeing and harvesting a three quarter or 50 per cent stand of any crop as for a full stand; and often this low percentage of stand is due to poor seed and the same expenditure might have produced a 25 or 50 per cent greater crop had the proper kind of seed been used.

In the case of the potato these conditions are all the stronger because of the great expense connected with the care of the growing crop and its harvesting. Good seed potatoes, then, comprise one very important factor without which success in potato growing cannot be secured. But how shall we define good seed potatoes and how can they be distinguished from other potatoes. The final test of good seed potatoes is the quantity of marketable tubers they will produce when given the proper attention. That may, perhaps, seem self-evident, but it is the point of view which is sometimes lost from sight in examining seed potatoes and some one characteristic of good seed potatoes obscures this final test. Let us not forget, then, that good seed potatoes are productive potatoes. What the grower wants to know, however, is the way in which good seed potatoes can be distinguished from poor ones, either when he goes to market to purchase his supply or when he selects them from his own crop. But do not jump to the conclusion immediately that the writer is going to tell you in the next sentence just how this may be done because he believes it is impossible to determine absolutely from the examination of a potato whether it will be productive when planted. Usually, under our present market conditions, the only criterion by which you can judge whether you have used good seed potatoes is the fact that, when the soil is thoroughly fitted and the plants given good care throughout the season, at harvest time you find you have a crop which equals the best that has been produced in your locality.

However, the writer does not wish to have you infer that the examination of seed potato stock has no value, or even little value. The examination of seed potatoes is largely a matter of the elimination of the unfit rather than a determination of the fit.

HORSE BEANS SOUND

Investigations have shown that there are large quantities of horse beans being shipped into interstate commerce for food purposes and that some of these horse beans are wormy or weevil infested. Such wormy or weevil infested beans are unfit for food purposes. The department of agriculture, therefore, is serving notice that the shipment of such products into interstate commerce is in violation of the food and drugs act.

Wormy beans become infested while growing on the vines. Eggs are laid on the small green pods, and the larvae hatched from the eggs burrow into the beans where they slowly develop. The wormy beans can be readily detected and there is no excuse for selling them for food purposes.

COMING FAIRS CALIFORNIA

No state fair will be held this year on account of the Panama Exposition.

Merced District Fair, Sept. 23-25.

Fresno District Fair, Sept. 28-Oct. 2.

Riverside District Fair, Oct. 5-9.

Livermore, Land Products and Show, Livermore, October 8.

South San Joaquin District Fair, Manteca, October 8-9.

Orange County Fair, Santa Ana, Oct. 12-16.

National Orange Show, San Bernardino, Feb. 17-24, 1916.

ARIZONA

State Fair, Phoenix, Nov. 15-20.

COLORADO

Farmers and Stockgrowers' Fair, Burlington, Sept. 22-25.

Montezuma County Fair, Cortez, Sept. 21-24.

Las Animas County Fair, Trinidad, Sept. 21-24.

Soil Products Exposition, Denver, Sept. 27-Oct. 9.

El Paso County Fair, Calhan, Sept. 29-Oct. 2.

Colorado Agricultural Fair, Overland Park, Denver, Oct. 2-9.

Dry Farming Congress, Denver, Oct. 30-Nov. 10.

IDAHO

State Fair, Caldwell, Sept. 27-Oct. 1.

Northwest Livestock Show, Lewiston, Nov. 29-Dec. 4.

MONTANA

State Fair, Helena, Sept. 20-25.

OREGON

State Fair, Salem, Sept. 27-Oct. 2.

Clackamas County Fair, Canby, Sept. 20-23.

Pacific International Live Stock Show, Portland, Dec. 6-11.

UTAH

State Fair, Salt Lake City, Sept. 26-Oct. 3.

WASHINGTON

State Fair, North Yakima, Sept. 20-25.

Corn and Hog Show, Prosser, Oct. 22-24.

Stevens County Live Stock Show, Oct. 27-30.

Western National Dairy Show, Seattle, Nov. 8-13.

Cascade International Stock Show, North Yakima, Nov. 22-27.

WYOMING

State Fair, Douglas, Sept. 26-Oct. 2.

Small Fruits

Vegetables

EFFECT OF POLLENIZING ON FRUIT

DOES the planting of cucumbers near melons cause inferior fruit? That is, does the pollen of the cucumbers in fertilizing the flower of the cantaloupe or other similar plant also change the quality of the same year's fruit. Of course it does destroy the seed for next year's crop and in addition a few growers will not plant these crops near each other for fear of inferior fruit. Most market producers, however, pay no attention to this. The question now comes "Is there really any difference?" "Principles of Breeding" by Davenport Says:

"Effect of crossing upon fruit in general. What the layman calls fruit is commonly not the endosperm that has been under discussion but the thickened and much developed fleshy receptacle on which the seeds are borne. It has been claimed that these parts are directly influenced the first year by crossing, so that the character of strawberries, apples, pears, melons, squashes, etc., depends much upon the source of the pollen used in fertilization.

"This claim has never been well substantiated by direct experiment. Dr. Burrill of the University of Illinois tells me that he crossed Crescent strawberries both with the Sharpless and with a wild berry especially selected for its insignificant, worthless fruit. Nobody was able to detect the difference in the resulting crops. So far as known to the writer the same principle holds in other fruits. It is the endosperm and not the receptacle that is directly affected by fertilization, and any influence upon the latter must be indirect and comparatively slight.

Though the receptacle is not itself fertilized, its development is conditioned upon that of its superincumbent seeds, which are themselves directly dependent upon fertilization for their development.

"This fleshy growth of the receptacle is, therefore, the result of a kind of stimulus from the growing germ, and it is conceivable that this stimulus may differ somewhat in degree, depending upon the source of the pollen. In this way the size of the fruit might be indirectly influenced by the pollen; and in fruits like the pear, which are not concentric about the seeds, even the shape might be influenced in the manner noted."

Better than that, however, is the fact that we can turn to an authority in our own state, Dr. Herbert J. Weber, who has spent much of his life in studying matters of this nature. We asked a statement from him. He writes:

"With reference to the effect of cucumber and squash pollen on melons and cantaloupes when planted near to the latter:—

"According to your letter I understand that it has been claimed that there is an effect on the fruit of the same year, that is, a current or immediate affect from the pollen. I would state that the evidence on this point

is pretty strongly against their being any effect. At one time it was thought that there certainly was such an effect in certain cases, this belief being derived primarily from such cases as the change of color in the endosperm of corn and various grains, as well as peas. However, we have come to understand this result clearly and find that it is due to the fact that in corn, for instance, the endosperm, which makes up the greater part of the interior of the corn seed, is material that is developed inside of the embryo sack but

is distinct from the embryo, developing from the egg-cell. It has been discovered in a considerable number of plants, corn among the rest, that we have a process now known as double fecundation. There are normally two male cells developed in the pollen tube, and one of these cells normally fecundates the egg cell proper from which the embryo develops. The second male cell in certain cases has been found to unite with the so-called endosperm nucleus, causing a secondary fecundation, and from this secondary fecundation the tissue of the endosperm develops. In corn, therefore, not only is the embryo following the cross a hybrid, but this endosperm, which forms all of the interior part of the seed, is also hybrid and shows the effect of the hybridization. The belief in the immediate effect of pollen was based on such cases as corn. In peas, where all of the interior of the seed is the new embryo, of course there is an effect from the cross shown in the embryo itself.

Taking the case of melon-like

fruits, there is no development of this kind as the embryo is confined inside of the seeds in the interior of the fruit. It is only this small embryo that would be affected by the hybridization, and I know of no experimental research that shows the influence as passing out and affecting the portion of the fruit that is eaten. I do not, therefore, believe that there is any danger to the corn of a certain season from planting cucumbers and squashes or pumpkins near watermelons and cantaloupes.

"Again, we know that there is very little crossing of these different varieties in nature, so that even if the seeds were used from such melons for planting, there would not likely be very much effect the following year. We would, however, expect some effect in the following year from such planting, due to crossing accidentally.

"If one uses well-selected seeds of cantaloupes or melons known to be pure strains, I do not believe that any effect would be observed in the crop following from the planting of squashes or cucumbers near them."



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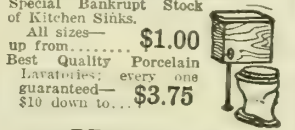
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tural department of the state of
Washington have been refused access
to parcel post shipments of fruit or
plants. The attorney general of that
state has given it as his opinion that
it will be impossible for the inspect-
ors to open packages unless before
shipment or after delivery.**KEEP THE TEETH BRIGHT**California Cultivator,
Los Angeles.

Gentlemen:

Your new gown is fine and enhances
our appreciation of an already splen-
did rural journal. It is the only im-
provement we could have suggested.
May your "teeth" be ever bright and
sharp. Yours sincerely,

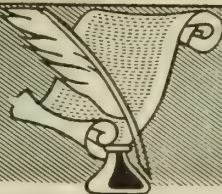
Ernest L. Owen, San Diego.

We appreciate the hearty commen-
dation, especially the suggestion that
the Cultivator's teeth be ever bright
and sharp. In this particular though
we feel justified in reminding Mr.
Owen and all of our readers that
while it is up to the manufacturers of
the Cultivator to send it out with
teeth well sharpened, the keeping of
them bright depends upon use.**SUN-MAID SPECIAL**The Associated Raisin Company
is attracting no little attention in the
commercial world. It is doing things
in a way which brings publicity to
California in general and money for
the raisin grower in particular. The
wine men refused to buy low-grade
raisin grapes to make up into brandy,
so the association, to take them out
of the raisin market, is now buying
them up.

Another big feature recently pulled

off was the Sun-Maid Special of 42
cars of raisins which was sent out of
Fresno recently, making record time
through to Chicago. It went out with
flying banners and at every town it
passed in daylight was given a royal
reception.**PASSING THE WORD**In the heading of one of last
week's editorials we asked if our read-
ers did not like us better, especially
as to the new material of which our
dress is made. "We have received
definite answer from our patrons;
they do. Our better paper has caused
much favorable comment and our in-
vitation to subscribers to join in the
effort to make the paper a greater
power has been answered affirmatively.
These hearty words of commendation
and good will are inspiring to
greater effort. We have some good
things coming that are entirely in
keeping with our finer appearance, for
the suggestions requested are coming
in and we are going to accept them
just so far as lies in our power.**BIG CROPS**Reports from the department of
agriculture show crops this year to
run five and a half per cent above
the ten-year average. Peaches lead.
This fruit runs, compared to the aver-
age, 144.2 per cent. Spring wheat
also is a long crop, 123.2 per cent.
Barley is 118 per cent; apples, 117;
kaffir corn, 114; potatoes, 108.2; al-
falfa, 106.5. Grapes are slightly un-
der the average, or 98 per cent. To-
matoes, hops, oranges, rice, etc., are
about the same percentage.California's general average of all
crops is slightly above average, or
107.7 per cent.The total production of important
products this year compared with last
year is estimated as follows: Corn,
111.7 percent; wheat, 110.1 percent;
oats, 123.4 percent; barley, 114.4 per-
cent; rye, 103.3 percent; buckwheat,
105.9 percent; white potatoes, 100
per cent; sweet potatoes, 114 percent;
tobacco, 108.2 percent; flaxseed, 112.5
percent; rice, 108.3 percent; hay (all
tame), 115.6 percent; clover hay, 134.6
percent; cotton, 74.5 percent; apples,
84.6 percent; peaches, 118.5 percent;
pears, 91.7 percent.**OVERHEAD EXPENSE**There is a fund of information
or rather inspiration in the article on
the third page of this issue. Mr.
Garthwaite has been studying the
marketing side of the orange industry,
or perhaps more properly the packing
house side, with particular reference
to overhead expense. Many growers
of Washington navel oranges have
found this year's returns unsatisfac-
tory. The expense of growing the
crop has been far from small. Some
have claimed that in some packing
houses not sufficient attention has
been paid to this matter of overhead
expense. This is entirely in the hands
of the growers and they are insisting
that attention be given to excessive
salaries. Ability must be paid for,
but we believe Mr. Garthwaite's sug-
gestion for a conference of those in-
terested is a most valuable one and
we trust will be carried out. In a per-
sonal letter Mr. Garthwaite writes:
"It seems that at present the only
meetings that draw crowds are the
ones that are called to kick about
something." If this conference is
called it should be not of the kicking
but of the constructive kind.**MARKETING TROUBLES**"The unparalleled glut in the
Eastern produce markets has spread
discouragement among hundreds of
vegetable growers. Marketmen have
not been able to keep the big receipts
moving nor to keep the retail prices
low enough to stimulate consumption
sufficiently to take care of the sur-
plus. In Philadelphia as well as in
other large Eastern cities thousands
of tons of perfectly good foodstuffs
have been wasted, and larger quanti-
ties have been left to rot in the field,
as the market prices would not pay
the cost of harvesting and shipping."The above from the Country Gen-
tleman is but a sample of many simi-
lar remarks found in the Eastern farm
papers. It is used only to show to
our California producers who are
somewhat discouraged with this year's
conditions that they are not alone in
meeting a serious marketing problem.
It also shows that there must be more
oneness of purpose in our marketing
system. Farmers are competing with
each other and of necessity will con-
tinue to do so, but they need not con-
tinue to the degree they have during
past years. They must get together
and secure more even distribution.It has been the Cultivator's plea
for years that we might have more at-
tention given to the marketing ques-
tion. This is a big question and one
that calls for our best effort. Only
recently the department of agricul-
ture has taken up this phase of farm
life. Our state university and other
institutions are also joining in the ef-
fort to solve it. The greatest step in
that direction is the education of the
farmer himself. It takes the highest
intelligence for cooperative effort.
The more we study the closer together
we get.**THE NEWLANDS BILL**The Inland Waterways Associa-
tion met in Los Angeles last week and
much interest was shown in the ques-
tion of endorsing the Newlands Bill.
Opinion was divided as between en-
dorsing the bill and endorsing the
principles on which the bill is found-
ed.To the layman this seems like a
splitting of hairs, but President Dock-
weiler fought for the endorsement of
the principles because of certain de-
fects in the details of the bill as it
has been presented. George Max-
well, on the other hand, was a con-
sistent fighter for the full endorse-
ment. He admitted that there were
errors in the construction of the bill,
but contended that they were errors
in details, not in fundamentals. He
affirmed that the easiest way to damn
the whole proposition was to endorse
the principles. He said that the de-
fects of the bill could later be worked
out and that at the recent meeting at
New Orleans large interests did their
best to discourage the bill, but their
effort failed and the congress fully
endorsed it.The supporters of the bill won a
signal victory and the Los Angeles
meeting also fully endorsed it.This bill gives the federal govern-
ment authority to initiate, and money
necessary to carry out, plans for the
control of stream freshets, the use of
surplus waters in the promotion of
agriculture, power, and other develop-
ments, and furthering of navigation
interests in the eight districts. For
the California-Pacific division the ap-
propriation is \$50,000,000 and for the
Colorado River division a similar
amount. The Missouri River-Great
Plains-Gulf division, and the lower
Mississippi, Ohio River and Appa-
lachian-Atlantic divisions get \$100-
000,000 each, and the Mississippi-
Great Lakes division \$50,000,000.**Agricultural Notes**To boys who do the best work in
judging live stock the Missouri State
Fair management offers cash prizes
amounting to \$180.Indian cattle for breeding purposes
are being imported into the Philip-
pines. Five hundred head have been
purchased by the island bureau of
agriculture.Beef cattle are bringing steep prices
in Australia. In one day's sale at Ade-
laide 65 bullocks were sold by one
cattle raiser at an average price per
head of \$149.26.A "round the world" service of
cargo ships has been announced by a
Japanese steamship company, vessels
to sail once a month from Hong Kong
through the Suez to Europe, returning
through the Panama.Latest advices from Uruguay show
excellent crop prospects for the cur-
rent agricultural year. The area de-
voted to wheat and other grains is
larger than usual, and the fact that
much of this is being grown from im-
ported seed gives prospects for im-
provement in quality as well as in
quantity.The United States commissioner of
labor recently sent 1000 circulars to
employers of labor asking how far
they required their employees to be
total abstainers. Six thousand nine
hundred and seventy-six employers
replied. Of these nearly 4,000 required
total abstinence of their men. Ninety
per cent of the railroads, 77 per cent
of those engaged in agriculture, 82
per cent of those engaged in business
and 88 per cent of the manufacturers
in the United States have made this
same ruling.Reports from Chile indicate that the
July and August shipments of nitrates
have been more than double those of
the corresponding months of last year.
These shipments are moving to Eu-
rope as well as to the United States.
The importations of nitrate of soda into
the United States in the month of
June, the latest available figures, were
93,076 tons valued at \$3,117,765,
against 57,411 tons valued at \$1,640-
067 in June of last year, and it is prob-
able that the July and August figures
will show an equal, or, perhaps, greater
advance over those of last year.The example of the French govern-
ment in sending a commission to
South America to study trade condi-
tions and the opportunities which may
become available as a result of the
war is being followed by the govern-
ment of Spain which is reported as
preparing to send a commission to
certain of the South American coun-
tries to study trade opportunities.
The population of Buenos Aires, Ar-
gentina, was estimated on June 30,
at 1,593,000, a total which is exceeded
by only three cities in the United
States, New York, Chicago and Phila-
delphia.Fourteen of the factories affiliated
with the Queensland (Australia)
Cheese Manufacturers' Association
closed down on account of the dry
weather, the Sydney Morning Herald
reports under date of July 26. The
supply of milk to the various factories
fell from 148,000 gallons in 1914 to
15,900 gallons this year. There has
also been a butter famine. People
with one or two cows in the neigh-
borhood of towns along the southern
line of New South Wales have been
able to turn their milk to profitable
account. Even supplies in pound pack-
ages have been sent to Sydney in
some instances.

Agricultural News Notes



of the Pacific Coast

Northern California

There are three almond-hullers busily at work in Guinda, Yolo County.

An alfalfa growers' association has been formed at Dixon, Solano County.

Early construction of the levees of the Sutter by-pass has been ordered by the state reclamation board.

The Yolo County farm bureau held a fair in connection with the Esparto Almond Festival on September 4.

Rice cutting is expected to start by the middle of September. This will be a month earlier than last year's harvest.

D. D. Green, formerly county clerk of Sutter County, has received the appointment of county sealer of weights and measures.

Sebastopol will have a potato conference September 25. There will be two sessions, one at ten in the morning, the other at two in the afternoon.

The Livermore center of the Alameda County farm bureau is preparing for a combined land product and stock show to be held Saturday, October 9.

The Five Counties Exposition, which is participated in by Lassen, Modoc, Shasta, Siskiyou and Trinity Counties, is being held at Redding, Shasta County, this week.

Farm Adviser Amundsen of Placer County has taken up as his first work the matter of securing someone to reopen the Auburn creamery which has been closed for several months.

A sheep cheese factory is to be operated this year at Esparto, Yolo County. The factory will run with 1250 head of selected ewes, the lambs to be marketed at three months.

Sixteen carloads of Nevada sheep were brought into Woodland, Yolo County, the first of the month. They will be fattened in the stock yards. Most of them are already sold to San Francisco buyers.

The Fort Bragg cannery is busy putting up string beans, and it is estimated that the total output of beans will be 4000 cases. About 30,000 cans of peas have been turned out. This has been the cannery's busiest season and extra help had to be hired.

Organization of the Sutter County Farmers' Protective League was perfected at a meeting in Bogue Hall on Friday, August 27. The purpose of the league is to inform members as to the marketing situation and so enable them to stand together for good prices.

A large tract of timber land near the coast in southern Mendocino and northern Sonoma Counties has just been sold to a Los Angeles firm. This was formerly the property of the Gualala Lumber Company and comprises some 25,000 acres of land on both sides of the Gualala River.

The Napa County farm bureau fair, held in connection with the St. Helena Vintage Festival, September 3-6, had a large circus tent filled with farm bureau exhibits. Adjacent to the tent the farm bureau conducted a cattle show where were exhibited dairy cattle, horses, swine, sheep and poultry.

Central California

The farmers' union warehouse at Tulare has already received 75,000 sacks of wheat and barley.

Fruit inspectors for the Pajaro Valley are L. P. Skov, B. B. Rich, A. J. Lewis and H. B. Hopkins.

Grass fires in the Fountain Springs and White River districts of Tulare County have destroyed 15,000 acres of feed and some timber.

One hundred twenty-eight tons of baled barley hay were burned last week on the Charles D. Cheney ranch, four miles south of Tulare.

Over 100 Kings County people attended the ground breaking ceremonies at the commencement of the work on the county highway system.

A train of 41 cars loaded with Sun Maid raisins left Fresno the last Sunday in August. The bulk of the shipment is consigned to foreign buyers.

Scale Insects was the subject of a talk by Prof. H. J. Quayle of the experiment station to orange growers at Riverside the evening of September 10.

Secretary Wright of the Watsonville Apple Distributors answers inquiries as to the effect of the hot weather on the fruit. He says there has been very slight injury.

The Prune Growers' Committee of Santa Clara County, which met in San Jose August 28 to collect statistics as to the 1915 crop, announces its estimate as 1755 green tons for this season's crop.

The Associated Raisin Company announces that orders are now in hand for the entire 1915 crop of seedless raisins. The price of Thompsons Seedless this year is about a quarter of a cent higher than last.

The new peach growers association is receiving many subscriptions to its capital stock. J. P. Bolton of Fresno is secretary. The executive committee has decided that \$250,000 of the capital stock should be subscribed by January 1.

More than 300 delegates from various points in the San Joaquin Valley attended the peach growers' mass meeting at Fresno Saturday, August 28. Meetings at different points in the valley will be held as soon as they can be arranged.

The Sunmaid special train of 42 cars of raisins, which left Fresno on Saturday, September 4, reached Chicago on the morning of the 9th. The train attracted much attention all along the line as it was well advertised and placarded.

The South San Joaquin district is intending to hold a community fair in Manteca October 8 and 9. The Parent Teachers' Association, chamber of commerce and farm bureau centers of the district are cooperating to make this a success.

The Central Stockmens' Association, composed of members from Fresno, Kings, Kern, Monterey, San Luis Obispo and Santa Barbara Counties, held its first annual convention at San Luis Obispo on Saturday, August 28. All former officers were reelected. H. V. Jack of San Francisco is president of the association.

Southern California

The cannery at Placentia will open September 20 on tomatoes.

Orange County's fair will be held October 12-16 at Santa Ana.

Escondido held a very successful Grape Day celebration Sept. 9.

The Palo Verde Valley is to vote on a \$1,000,000 levee bond issue.

Peach growers of Chino are proposing to establish a cooperative cannery.

A potato convention will be held at Nuevo, Riverside County, September 17.

California now stands third in the union in number of registered automobiles.

Hemet is to have a cooperative cannery owned and managed by fruit growers of the valley.

A new fruit and vegetable cannery has just been established at Buena Park in Orange County.

Orange County's board of supervisors have let the contract for paving the Santa Ana Canyon road from Olive to Peralta.

The Santa Ana Cooperative Sugar Company is soliciting beet contracts in the San Luis Rey Valley of San Diego County. It is expected to sign up at least 1000 acres.

The great Irvine Ranch in Orange County is shipping out 10,000 to 12,000 sacks of beans daily. It is estimated that the ranch will produce this year approximately 250,000 sacks.

Three thousand acres in the San Fernando Valley has been signed up to be planted to sugar beets for next season. The crop is contracted to the American Sugar Beet Company at Oxnard.

Live Stock Inspector R. W. Ritter of Imperial County reports that there is a serious outbreak of hog cholera at Westmoreland. He is urging farmers all over the valley to vaccinate.

The deer season opened on September 1 in District Number Four, which includes Los Angeles, San Bernardino, Riverside, Imperial, San Diego, Orange, Ventura and Santa Barbara Counties.

The California Vegetable Union has leased the warehouse back of the creamery building at Buena Park in Orange County. It expects to ship from this point at least 30 carloads of vegetables.

Ventura County's new live stock ordinance went into effect September 15. This ordinance provides for the quarantine of premises on which any infectious or contagious live stock disease exists.

Several representatives of Ventura County bean growers have been conferring with bean men of Orange County with the object of forming an inter-county association for marketing and maintaining prices.

Garden Grove has formed a local association which will affiliate with the Orange County Fruit Exchange. Directors named for the first year are: W. W. Dungan, J. O. Arkley, C. A. Westgate, Milo Allen, Ed Dozier, J. W. Crill and W. L. Russell.

The Coast

The grain harvest of Lake County, Oregon, is above average. Threshing will begin in a few days.

The farmers' association of Cochise County held its first annual convention at Douglas the last week in August.

Grain raised by dry farming methods near Eureka, Idaho, is now being harvested, in many places yielding 20 bushels to the acre.

A soil survey of Alaska has recently been made by the federal bureau of soils and its results will soon be printed in a bulletin.

Wheat growers of Sanders County, Montana, are threshing a good crop. They are holding for the good prices which they expect later.

Lectures on live stock topics will be delivered at the Spokane Interstate Fair by experts employed by the Northern Pacific Railway.

The first vessel of the season's grain fleet from Puget Sound sailed from Seattle August 30. It carried 6500 tons of wheat, bound for Australia.

The salmon fisheries of the Columbia River describe the season just closing as the best ever, the pack of spring salmon being about 35 per cent of last year's.

Warehouses in Columbia County, Washington, are taxed to capacity with wheat. Farmers are beginning to pile their grain sacks in the fields. Buyers are rather slow in taking hold.

Vice President Clark of the Oregon Hop Growers' Association, who has just completed inspection of the hop yards of the state, says that the entire hop crop will be under 100,000 bales.

The second annual Manufacturers and Land Products Show of Portland, Oregon, will be held October 25-November 13. This show is under the direction of the Portland chamber of commerce.

It has been held by the assistant attorney general of Oregon that state fruit inspectors have no power to open parcel post shipments while in the hands of the postal authorities. It is his opinion that they may only be opened before mailing and after delivery.

Railroads entering Arizona have made a new rule governing transportation of caretakers of live stock. In cases where shipments of more than one car belonging to one owner are made from different stations, or from one point to different destinations, free transportation both ways will be given to the caretaker.

Market reports received in Washington by the representatives of the government bureau of markets assisting in the marketing of pears and peaches have proved of such great value to shippers that W. H. Paulhamus, president of the growers' council, at the request of shippers, wired C. J. Brand, head of the bureau, asking that the agents be continued there through the apple season. Senator Jones also wired a similar request to Secretary Houston.

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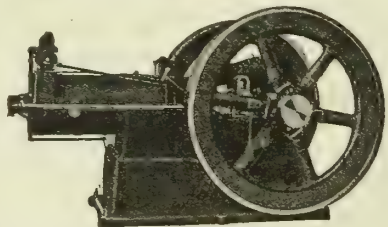
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Live Stock and Dairy



RESPONSIBILITIES OF THE BREEDER OF REGISTERED LIVE STOCK

Written for the California Cultivator
By W. S. Guilford



ONE of the most hopeful things about the live stock business in California is that an increasing number of the best men and women engaged in

it are beginning to breed registered animals.

This brings the query that is many generations old; "What will happen when everyone is breeding registered animals and there is no further market among beginners and those who have only grade herds and buy pure-bred sires?"

Probably no one knows just what will happen when this occurs, but at the present rate of increase that time is so far off that none of us need to worry about it. And if it should come there is no reason why pure-bred animals should not then be kept for the purposes of utility for which they are bred. There should be no disadvantage to the breeder who owns a herd of pure-bred dairy cattle to keep them for milk purposes alone if everyone else in the country had as good and because of this his market for pure-bred animals at a higher price than their milk-producing ability alone would warrant is shut off.

And pure-bred hogs make good pork; in fact many herds are kept for pork production alone and well pay for the extra cost of the foundation stock.

Let no one hesitate about starting in the live stock business because of the fear that it is going to be soon overcrowded, for while a good many are starting each year, the total number as compared to all of the breeders of live stock of all kinds is so few as to make a very small percentage.

There are some things that all beginners should understand and realize before they start.

A breeder of pure-bred animals should feel that it is his mission to maintain and improve the standards of excellence that have been set by his predecessors in the business. In order to do this he must study the living animals of the breed and learn as much as possible of the traits and characteristics of those represented in the ancestry of the animals in his herd, stud or flock, that he is not able to see.

The animals that are produced that are inferior should be discarded no matter what the temptation may be to sell them for some price because they are eligible to registry.

There must be accommodations for properly caring for stock if the business is to be conducted as it should be, and an abundance of feed must be available.

One of the very important things about the pure-bred live stock business is the keeping of records. A breeder must know absolutely that his animals are what they are represented to be. They must be plainly marked so that there can be no question as to their identity, and the records should be in such shape that the herd could be turned over to a stranger on a mo-

ment's notice. Animals must be registered promptly, and when they are sold there should be no delay in making the transfers of ownership. Many otherwise careful breeders lose many customers in delaying this transferring and registering, and any one who is not prepared and able to attend to the details of this part of the business should never engage in the growing of pure-bred animals for sale as registered stock.

It is as much a pleasure to see affairs of this kind well started and kept up as it is a disappointment to find the thing carelessly done. I have visited herds where the owner hardly knew the names of his animals—and was able to find their certificates of registry only after much hunting. And then there was so much doubt as to markings and identity that a prospective buyer would not care to risk buying anything in the herd.

And in others quite the opposite is true. There should be some kind of an office in connection with every pure bred herd, and all of the records should be there. And the more convenient the arrangements for keeping these the better it is for the owner or manager and the more is the buyer impressed that everything is as it should be. I saw some very clever ideas carried out in connection with the Berkshire hog herd at Butte City in Glenn County recently.

All of the original certificates of registry are kept in a safe, but the pedigrees of the animals and the records of litters, etc., are kept on a card system. Every animal in the herd has a number, and this is indicated by notches in the ears. These ear notches are marked on the application for registry, the certificate of registry when received, and on all of the ranch records of each animal. Then charts have been made of the pedigrees of the herd sires and the various brood sows, and these are hung on the wall. They are so fixed that they can be taken down easily. These make an easy reference, and everyone interested in the herd is able to become familiar with the breeding of the animals. Pictures of many of the animals represented in the pedigrees, which constitute the famous animals of the breed, are mounted and cover a large part of the wall area in the office. This makes a very interesting study—these pedigrees and pictures and records.

There is nothing complicated or difficult about the bookkeeping end of the pure bred business, but it must be done accurately and promptly.

There are many men breeding grade and scrub animals who are capable of handling pure breeds, and they would not only find greater profit in it but more to live for and work for.

Special attention should be given to the condition of the udder, and any milk which appears slimy, ropy, watery, or otherwise abnormal, should not be used as food. As a rule milk should not be used within 15 days before calving or during the first five days after calving. It is well not to use milk from cows which have been given powerful drugs, for these may pass through the tissues of the mammary glands into the milk.

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NO JERSEY FUTURITY STAKE THIS YEAR

We have a letter from Mr. Guy Miller in which he refers to the fact that there will be no California Jersey futurity stake this year, nor until the California state fair of 1916. All will understand that the state fair was called off on account of the Panama-Pacific Exposition. Also because of there being no state fair there will be no butter fat contest, not even at the Fresno fair which last year made a five-day test, at which there were entered 15 cows and which proved to be a most valuable test. Members of the association feel that Fresno has manifested so much interest in the wild west broncho bucking exhibit that it has no funds for the encouraging of an educational butter scoring test.

Regarding the futurity Mr. Miller writes:

"There was a meeting of the California Jersey Breeders' Association held in Modesto this month at which meeting it was decided to postpone the California Jersey futurity stake that was to be contested for this year until the California state fair in 1916, when it will be contested for by the present entries who will at that time be three-year-old heifers.

"This will in no way affect the futurity stake for 1916, as both stakes will be contested for at the same time in the regular five-day butter fat contest at Sacramento. It is expected that the futurity stake will be contested for annually at Sacramento in the regular five-day butter fat contest for heifers under 30 months old, as was originally provided for in the rules governing this futurity."

SWINE SPREAD FOOT AND MOUTH DISEASE

The susceptibility of swine to the foot-and-mouth disease and the failure on the part of swine owners to recognize its symptoms are giving the federal authorities no small amount of worry in their "clean-up" campaign.

Sore mouth, a common indication of the disease, is an ordinary sequence of hog cholera, and contusions on the feet are frequent in swine which have been driven or shipped. For these reasons little attention is paid by the owners of swine to these symptoms, and unless the herd is located within suspicious territory foot-and-mouth disease may continue in a chronic form for a considerable length of time before discovery. The danger of course lies in the ability of these animals to disseminate the disease.

Since the first case of foot-and-mouth disease found in a herd of hogs in Michigan, which later permitted the infection of the Chicago Stock Yards, hogs more than any other animal have been responsible for the spread of the disease. A few months ago, in the outskirts of Philadelphia, in a district containing close to 20,000 swine kept in small lots, several thousand were found to be infected.

Automatic devices which allow pigs to rub against an oiled surface have been placed on the market. The pigs soon learn to rub the portions of the body affected by lice against the oil which will kill the insects. This plan requires no time after installation except to keep the reservoir filled with oil. The medicated hog wallow has been recommended by some stockmen. This consists of pouring crude oil on the surface of the hog wallow.



Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

A Word to the Readers of the Veterinary Column

Attention has been called several times to anonymous letters. We can not give attention to those who will not sign their names. The name will not be published but we must know who the writer is. Also, the notice at the head of the column applies to all. The publishers do not pay nor request me to answer questions by return mail free and I feel sure it is worth the price asked for such replies. Letters sent direct to me may reach the paper one week earlier. I am ready and willing to help you all I can through the paper free, also willing to do what I can by letter as stated at the head of the column or will answer calls for as reasonable a fee as any other reputable veterinarian. Under these conditions, I am at your service.—Dr. Wm. Petrie, 2714 South Harvard Boulevard, Los Angeles. Telephone, West 209.

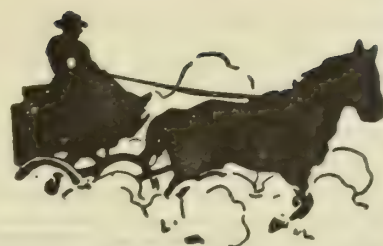
Ring-bone

Please tell what I can do for ring-bone. Is there any cure for it?—Subscriber, Clovis.

Probably the best treatment for ring-bone is to first remove the shoe and pare the foot so it stands square on the ground and put on a light shoe. Then clip off the hair up to the ankle and wash the parts clean. When dry rub in a blister made of one part cantharides, one part biniodide of mercury and six parts lard. Rub it in well, using plenty of the ointment. Then fire it by puncturing the skin in ten or twelve places with a pointed red hot iron. Tie the horse so he cannot reach it with his nose for 24 hours. Then grease it with lard and keep it soft by applying lard occasionally until the scabs are all removed. Repeat the blister, without the firing, every two weeks until four blisters have been used. Remember to tie up the head for 24 hours after each blister. You will get better results if the horse can run in a wet pasture or is turned loose in a box stall where there is a foot or more of straw or shavings. If you do not understand something about doctoring horses you had better get a veterinarian to do the firing for you.

A Balking Team

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tivator how I may start a balky team. I have owned the team for three years and they never balked with me until two months ago. Another party overloaded them on a bad hill and since then they stop at the bottom of almost any grade with loads which they previously carried up without difficulty. I have tried kindness, severe

punishment and many suggestions without effect. They are 13 and 14 years old but are fine, big, gentle horses and until recently true to pull. Any advice that will help me out will be appreciated.—Subscriber, Searchlight, Nevada.

It is a difficult matter to start two balky horses. Separate them and give them each a new driver. They may work all right if hitched with other true pullers, but a poor driver may balk them again and at the same time spoil another horse. It about all depends on the driver, he must not lose his temper. You may be able to get them to forget their evil ways and work together by hitching a third horse in front of them. Do not hitch the third horse to the load but to the ends of two ropes tied around the bodies of the horses in the team. Use a 5/8 inch, strong rope; tie one end of the rope around the body of one horse just in front of the hind legs, so loosely that it will not annoy him when working and so that the knot will not slip. Leave one long end and pass that through a ring on the back pad, through a ring on the hame and to the horse in front. Do the same with each horse. Have the horse in front under control so he will not pull on the ropes unless you want him to. Then if the team stops, let the horse in front step forward and take a pull at the ropes. The team will probably follow. Work this way for a few days with very light loads increasing the load as you think best. In time you can hitch the third horse to the end of the tongue of the wagon and let him help to pull the load. In any case you had better change drivers. A new voice has a good effect. Never stop a load at the bottom of a hill. Stop far enough back so that they can pull several lengths of the wagon before reaching the hill. The main thing is to be kind to them and keep them thinking of something else.

Slavering

A few weeks ago I found the hay in the manger of a buggy horse all wet. Was told that his teeth were too long. Took him to a veterinarian and had his teeth attended to but he still slobbers. An eight year old team mare is also troubled the same way. Their feed is oat and wheat hay and ground barley. Can you tell what is best to do about it?—Subscriber, Concord.

There may be a weed in the hay that is causing it. In that case it will be hard to stop it unless you change the feed. There being more than one affected it, must be due to some external cause. If you do not see a change soon try giving the following medicine: Iodide of potash, four ounces, and water enough to make one pint. Mix and give a tablespoon on the feed or in the drinking water morning and evening.

Swollen Udder

Have a mare that the colts sucked after she had been dry nearly a year. Now her udder is swollen and very hard. What can I do for it?—Subscriber, Bachelor.

Rub it with the hands and milk out all you can two or three times a day. Also give her a tablespoon of nitrate of potash in the feed or water twice a day for a week.

Worms

I have a young stallion colt that will not get fat. His hair is rough and he looks very bad. He eats very well. I think he has worms. Please advise what to do for him.—Subscriber, Chowchilla.

Empty the bowels by giving two drams of aloin, two ounces of turpentine and one pint of raw linseed oil. Mix and give at one dose. Follow by

giving these powders: Powdered gentian four ounces, powdered nuxvomica two ounces, bicarbonate of soda four ounces and sulphate of iron two ounces. Mix and divide into 16 powders. Give one powder every day in the feed or by putting it in a bottle, adding a cup of water and giving it as a drench.

Carbolic Acid for Infectious Abortion

Please give formula for the use of carbolic acid in the treatment of cows for infectious abortion. I have a hypodermic syringe that holds ten cubic centimetres. How many cubic centimetres should be used? Also how is carbolic acid used in the feed?—Subscriber, Escondido.

Carbolic acid is safe used hypodermically if prepared as follows: Mix one part of carbolic acid, two parts glycerine and two parts water. Five cubic centimetres of the mixture is sufficient for a dose and should be repeated once a day for a week. That would be using one cubic centimetre of the acid at each dose. The injection should be made deep into a muscle on the chest or neck. Before each injection the hair should be clipped from the place and the spot scrubbed clean. Each injection should be made three inches or more from any former injection. In the feed or by the mouth as much as half a dram may be given but should be well diluted by mixing with linseed oil or with ten times the amount of alcohol and this again diluted with quite a quantity of water.

THE HARD MILKER

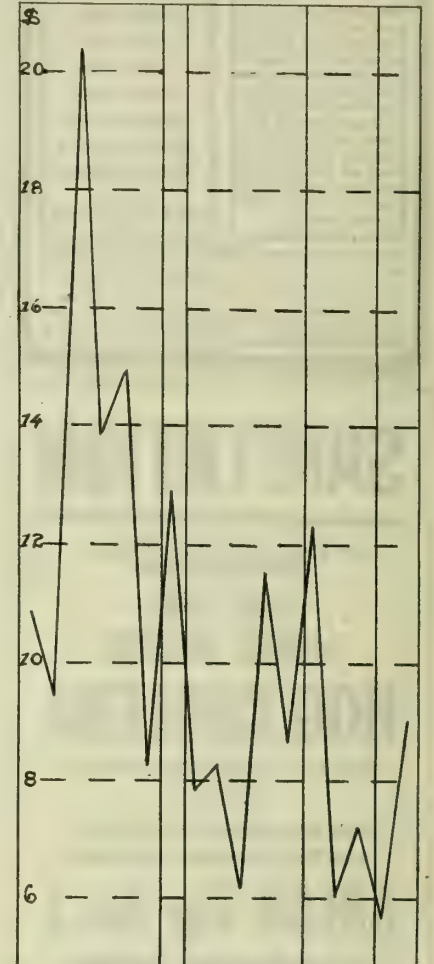
Some cows are naturally hard to milk; others are made hard by weak-handed milking. A woman or child with hands not strong enough for milking causes a cow to become hard for anyone to milk. To cure such a cow, oil the teat freely before starting to milk so that the oil will work into and soften the skin. Then milk the cow with as much force as possible, squeezing hard. This treatment will usually cure an ordinarily hard milker. Once in a great while it is necessary to cut the muscle surrounding the inside of the teat with a lance-like knife. This, however, is very likely to ruin the cow if not done with great care to avoid cutting too much and causing permanent leakage. It also makes a sore which is painful to the cow at the time of milking, and if done when the cow is not giving milk the wound grows together and the muscle becomes tighter than before.—R. M. Washburn, University Farm, St. Paul.

PACKERS MUST GET TOGETHER

(Continued from Page 267)

Of course the writer is aware that all men are not equal and that no two men will fill any given position with the same degree of efficiency, and nothing is further from his thoughts than to deny to any man the just return for ability displayed; but the wide divergence in these figures seems out of reason and indicates strongly the need of some readjustment.

Never before in the history of the citrus industry has there been greater



OFFICE EXPENSES PER CARLOAD IN RELATION TO NUMBER OF CARS SHIPPED

The profile in the above chart shows graphically the office expenses of 17 packing houses in dollars per carload per annum. The dotted horizontal lines are spaced at intervals of two dollars. The vertical lines divide the houses into groups according to the number of cars shipped by each. First group, six houses shipping less than 300 cars. Second, one house shipping 300 but less than 400. Third group, five houses shipping 400 but less than 500. Fourth group, three houses shipping 500 but less than 600. Fifth group, two houses shipping 600 and over. Office expenses include manager, assistant manager, bookkeeper, assistant bookkeeper, stenographers and clerks. (Chart by Garthwaite.)

necessity for strict economy and high efficiency and as in the early days of the business growers were forced into cooperation by unsatisfactory marketing conditions so the time is now approaching when the no less important internal problems will make necessary an even closer association. For this purpose the growers, or representatives from all of the various packing organizations must meet and discuss many questions of which the one set forth above is a sample and not the only nor the most important one.

CHEESE

Cheese, when properly cured, is not indigestible as many people suppose. Instead it is of high value as a food and should no doubt have a more important place in the diet. It should be remembered that there are two stages in the life of cheese. In the beginning it is tough and leathery and may be very hard to digest. Later, after it has gone through the proper processes of ripening and curing, chemical and bacteriological changes have taken place that make it more soluble and more digestible. Helpful ferments are produced and transferred to the stomach. It has also a condimental value due to the production of flavors and aromas varying with the variety. Such cheese is quite completely and easily digested as well as an aid to general digestion.—Farmer's Guide.

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Didn't Sign

A Los Angeles subscriber who writes regarding signing away his rights to a homestead and now wishes to recover them should write again with signature and give full particulars, especially the wording of the contract which he has signed or else he should lay the whole matter before his own attorney. He apparently has relinquished all his rights to a valuable property.



Poultry for Profit



MASHES, WET AND DRY

Written for California Cultivator
By Jean A. Koethen

THE mash is the very heart of poultry feeding, the center around which everything else revolves. Rapid growth for the baby chick, materials for the building of frame and muscle, fat for the broiler and the elements necessary for egg production are all bound up in the composition and manner of feeding the mash. The old way of feeding whole grain exclusively did fairly well for stock on range, for they were able to balance their ration with greens and grubs. The confined bird has no such chance and is dependent upon a carefully balanced ration.

The chief purpose of using ground rather than whole grain and mixing several kinds together, along with beef scrap, blood meal or some other preparation of protein, is a better balancing of the ration. Wheat alone is nearly a balanced ration, but wheat is expensive, and no other grain alone would answer the purpose. Corn is too rich in fat, barley contains too much starch and sugar, oats, if we could only get the heavy, white variety, would be nearly as good as wheat, but most of the oats we get on this coast are poor stuff, hardly worth feeding. The right results cannot be secured by using any one of these alone, but by mixing them we overcome the faults of all.

Of all the ground grains used in the mash bran is the most important. It is richer in protein than the whole wheat, having a nutritive ration of 1:4 and sometimes less. It is one of the earliest feeds given baby chicks and one of the most necessary, for it contains not only protein for muscle building, but ash for bones. Chicks will do very well on bran and commercial chick feed, if they have range, but the addition of corn meal and middlings with an increasing per cent of animal food, makes for more rapid growth. I have found nothing better for baby chicks than the Cornell mash, which consists of three pounds each of bran, corn meal, middlings and beef scrap, and one pound of bone meal.

For young turkeys neither corn meal nor beef scrap is safe food, but a dish of bran with a little bone meal added, given two or three times a week, is very wholesome and supplies material for the building of frame, which is so important.

Since other food stuffs have been so expensive the use of alfalfa meal has increased. It contains a good deal of fibre and does not at all take the place of green feed, but it is rich in protein and can well take the place of part of the bran in the mash. A simple mash which I have found very satisfactory the past season contains one quart each of bran, middlings, alfalfa meal and ground barley, and one-half quart of beef scrap or fish meal. Fine ground bone is added to this a part of the time. This is my summer formula. In cold weather the mash consists of two quarts bran, one each of middlings, corn meal, alfalfa meal and ground barley, and one of beef scrap. Many commercial poultrymen make the meat portion of the mash

consist of half beef scrap and half fish scrap, and this is doubtless better than either one alone. I never bother with charcoal, which so many mash formulas call for, except for turkeys. Vigorous, healthy chickens which are not overfed ought not to need anything for their digestion if they have grit.

Public opinion has vacillated between the wet mash and the dry for some years, and every poultryman still has his own system. If the reasons advanced for the use of each were catalogued they would read something like this:

The dry mash is more easily fed, less wasteful (sometimes) and more wholesome. It can be mixed in quantities and fed from hoppers which need refilling but once a week, thus minimizing the labor of feeding.

The wet mash secures more rapid growth, stimulates the appetite, and makes a most convenient vehicle for the feeding of sour milk, vegetables and table scraps.

To my mind, the great advantage of the wet mash is that last mentioned. I see no particular object in simply moistening the dry mash with water. If it can be moistened with milk, however, either sour or sweet, there is much to be gained. At Cornell the dry mash is kept before the chicks, and the same mash, moistened with sour milk, is fed at meal time. At the Missouri station during the laying season in addition to the dry mash, which is always before them, the mash moistened with sour milk is fed daily about 2 o'clock. Where only a small number of chickens are kept table scraps and kitchen refuse can be cooked into a most appetizing mash. Cook up the potato skins, tomato skins, waste cabbage leaves, etc., with plenty of water. Thicken with the dry mash, and add stale bread and any other scraps of cooked food. When green feed is scarce I cut lettuce leaves, green alfalfa, raw onion or Swiss chard into such a mixture as this, add a little salt and pepper, and there is a dish fit for any fowl, and an egg maker that can't be beaten. Such a mash may be given morning, noon or night, as is most convenient, and does not interfere at all with the dry mash which is always before the hens in its hopper.

Stale bread is a very valuable food for all ages of poultry, when it can be had cheaply, but it should never be moldy. It is most palatable when mixed in such a mash as I have described. The hens do not care for it dry, and if it is merely soaked soft in water it may affect the bowels. Soaked and mixed with other things it is ideal.

The moist mash is always fed to birds that are being fattened for market, but it is composed largely of middlings and corn meal. It certainly hastens the growth of young stock and is perfectly wholesome if the birds are given only what they will clean up in a few minutes and the troughs are kept clean. It is the abuse of the wet mash, not its use, that does the harm. It may be fed with excellent results to molting hens, for this is a time when a little extra nourishment is needed. I know one poul-

tryman whose only concession to the molt is a feed of moist mash once a day. For pullets that are slow in beginning to lay the moist mash fed hot with a little chopped chili pepper added, is a splendid stimulant.

Is it true that the moist mash is more economical than the wet mash? Could we, here in California, go back to the method of feeding practiced for many years in Little Compton, Rhode Island, where the wet mash was hauled around to all the houses in the morning and a good feed of grain given in the evening, and the hens left to their own resources the rest of the time? I think we might easily do this very thing if our hens were on range as those Little Compton hens were. The hen is by nature a forager. If there is food within reach she will get it. Shut her up in a bare yard, and what is there to keep her busy unless she has a hopper of dry mash or grain in deep litter, or both, to nibble at? Personally, I like the wet mash, and I rejoice in its possibilities, but I do not see how we could spare the dry mash. We need them both and they are not in the least antagonistic.

AN AVERTED EPIDEMIC

Written for the California Cultivator
By V. R. Henderson

During the first week of August two houses containing 400 three parts grown pullets began to show marked signs of bad colds. The symptoms were copious running at the nostrils and a choking cough. Only one bird showed any matter round the eye, but quite a number looked droopy and rough in feather. The weather had been extremely hot down here (Phoenix), and the nights seemed almost as hot as the days. I mention this for a reason which will appear.

What I did was as follows: I killed nine of the worst; closed the sleeping houses during the day to give me a chance of destroying the bacilli already there, and to keep others out; with a sprinkling can I watered the earth floors and the walls with crude carbolic moderately diluted; in the drinking water I put potash permanganate and a good tablespoon of turpentine per gallon and I was careful to see that the birds had a fresh supply for the last drink at night as well as for the first in the morning, but no water was left in the houses overnight; I cut out the soft food for a time to give the enemy bacilli no suitable lodging place if I could help it. The result has been satisfactory. Within a week the birds began to improve, and by the end of the month they were free from colds and were looking strong and well.

As colds and various forms of roup seem to be common round here it may be as well to observe that they find their way into the flock through the weaker members of whom there are far too many. Stock from poor parents can never be anything but poor stock and a source of trouble and loss to the owner. And stock from the best of parents which has not had justice done to it in the incubator should never be allowed to get as far as the brooder.

As a secondary cause I believe that the great heat has much to do with the start and spread of disease. The lowering of energy and loss of vitality resulting from it renders the birds liable to be infected by any suitable germ or to develop any inherited tendency.

One remark as to the use of crude carbolic. When it is used the amount of cresylic acid which it contains should be known and the disinfecting solution should be made of such

strength that it will contain two per cent of the acid.

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Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Thoroughbred Duroc Jersey Boars and Gilts, strong and vigorous stock. Fred Hart, Exeter, Cal.

Berkshires—Boar pigs for sale. Butte City Ranch, Butte City, Glenn Co., California.

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For Sale—Milk Goats; Thoroughbred Toggenburg buck, 2 months old, sired by Mark Anthony, dam daughter of imported Lady Barbara; a beauty; price reasonable. Also service of Toggenburg buck "Trixie", son of Prince Bismarck, dam "Trixie"; 6 1/2 quarts milk per day at first kidding. Phone South 2258-W. Address W. P. Griffin, 346 E. Manchester Ave., Los Angeles, Cal.

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For Sale—14 acres, one mile from the business center of the city; all improved; modern bungalow, good barn, tank and windmill, chicken house, brooder house and pens. Fine opportunity for raising chickens; 11 acres in alfalfa, family orchard, berries, etc. Address, Mrs. Anna Stromwall, R. F. D. No. 2, Box 8, Merced, Cal.

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For Sale or Exchange for Southern California acreage, 4 acres fine bulb or vegetable land in city of Santa Cruz. William Richard, owner, 438 River St., Santa Cruz, Cal.

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West Coast Seed House, Los Angeles, is offered for sale. A good growing business, central location, low rent, no debts. Will sell stock at less than cost, fixtures at a big discount, and nothing for the good will. Business established for years and has a good reputation. Also sell Poultry Supplies and manufacture Poultry Foods and proprietary articles that have a good sale. The name "West Coast" is well and favorably known. Stock inventoried July 1st at \$9832, but somewhat less now and can cut out some raw materials if not wanted. Would prefer selling as above for cash, but if you haven't all the money and can give good security, I will give time. Or will trade for good, well located land. I have other business that takes my time. T. S. Tompkins, 116 East 7th Street, Los Angeles, Cal.

Best, Cheapest Forage for poultry, cattle, hogs. Get our prices. Plant now. LUTHER BURBANK SPINELESS CACTUS PLANTATIONS, SAN DIMAS, CAL. Covina phone 902.

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs, \$3.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co., Cal.

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Peruvian Alfalfa Seed—Hairy varieties, also Algerian wheat. S. P. Huss, Yuma, Arizona.

Genuine Burbank Spineless Cactus—Strong mature slabs, \$3 per 100—\$25 per 1000. Thos. Cathers, Morgan Hill, Cal.

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SUCCESS IF YOU DO

Keep the nests clean; provide one nest for every four hens.

Gather the eggs twice daily.

Keep the eggs in a cool, dry room or cellar.

Market the eggs at least twice a week.

Sell, kill or confine all male birds as soon as the hatching season is over.

POULTRY SHOWS

Riverside, Fourth Annual Poultry Show, Riverside District Fair Association, Oct. 5-9, 1915, E. I. Hammond, secretary, Riverside.

San Jose, Santa Clara Valley Association, annual show, Oct. 6-9, 1915, Chas. R. Harker, San Jose, secretary.

San Francisco, Panama-Pacific Exposition, international poultry show, Nov. 18-28, 1915, D. O. Live-ly, Panama-Pacific Exposition grounds, secretary.

Redwood City, San Mateo County Poultry Association, Nov. 11-14, 1915, Fred West, Burlingame, secretary.

Phoenix, Arizona State Fair, Nov. 15-20, 1915.

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klussman, secretary.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Ontario-Upland Pigeon and Poultry Association, Ontario, San Bernardino County, January 27-29, 1916.

Seattle, Wash., King County Poultry Association, Jan. 10-15, 1916, C. W. Melville, 473 Colman Building, Seattle, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

THE PROLIFIC HEN

A most pernicious idea appears to be gaining ground in regard to the qualifications of a hen for breeding. The number of eggs she will lay is apparently the only passport to the breeding pen, regardless of development or constitution. By all means let us have the prolific hens for this purpose, but let us see to it that they are otherwise qualified. The foundation of success in poultry keeping is ability to hatch and rear strong, virile chickens, and these can only result from strong, well developed, well cared for parents. This also applies to the subsequent egg production. Therefore it follows that if a hen is weedy and run down she is not a fit subject for breeding, no matter how many eggs she has laid. But it does not follow that a good layer should be discarded as a breeder. That would be going to the other extreme, but what should be insisted upon is bodily development of sufficient proportions and strength as will indicate a breeder of robust stock.

The first investment in raising pork is small and the pig is a quick money maker on the farm. He multiplies rapidly, and if we only furnish him good pasture, grazing crops, pure water, and a little concentrated feed he will rapidly gain weight at a small cost.

QUERIES

(Continued from Page 273)

that a fair proportion are worth keeping three years.—J. A. K.

Leg Weakness

My turkeys are losing the use of their limbs. I am feeding them Gyp corn and ground alfalfa meal soaked in water. Since the leg trouble manifested itself have been putting slacked lime in the meal.—Subscriber, Modesto.

The ration is lacking in protein and also in material for the making of bone and muscle. I am not told whether the birds have range or not. Presumably they have not, or if they have, it lacks the bugs and other insects which a turkey requires. Turkeys on good range need very little food. Turkeys that are confined must be supplied with protein in the form of cottage cheese, cooked liver or hard-boiled eggs. Growing turkeys also need bran and some bone meal for building frame and muscle. I would give these birds the best range I could find, a dish of dry bran and charcoal once a day to nibble at, and three times a week I would mix into their bran about ten per cent of fine bone meal. If they seemed too heavy for their size I would cut down the ration considerably and encourage them to exercise by driving them around a little. Turkeys that are overfed are inclined to loaf instead of foraging and lack of exercise alone makes the legs weak. I am doubtful about Gyp corn for turkeys, thought I know many persons use it after the first three months. It is better than Indian corn but not as good as wheat, being less easily digested and more fattening. If you can give your turkeys range, and cut down the ration so that they will be obliged to forage, giving fresh green feed instead of the alfalfa meal, some wheat, if possible, instead of an exclusive grain diet of Gyp corn, and the bran and bone meal to tone up their bones and muscles, I think you will soon find them regaining the use of their legs.—J. A. K.

Establishing Title

I have some land bordering on the course of the Los Angeles river. I do not know whether my title is good although I have been paying taxes on this ten acres for a great many years. The boundaries are uncertain. Can I get my title established under the Torrens Act? Have had the land surveyed recently and I want to have the boundaries fixed officially.—Subscriber, Los Angeles.

The first step to take would be to get exact location of corner stakes. Then either through the Torrens system or through title searchers determine whether you have clear title. It is unwise to pay taxes until your title can be reasonably definitely established.

Ants in Lawn

How can I get rid of black ants in a clover lawn without injury to the lawn?—Subscriber, Orange.

A teakettle of boiling water will do some good though it will kill out a very small spot in the lawn. The same is true of carbon bisulphide, which may be kept in a common oil can, the nozzle being inserted in the opening of the ant hole and two or three pressures of the thumb will deposit sufficient of the liquid, which creates a poisonous gas, to kill many of the pests. A remedy which would not injure the lawn is taken from "Essig's Injurious and Beneficial Insects." This is recommended by Prof. Woodworth: "We obtained by far the best results by the use of a very weak solution of arsenic and syrup. Most of the commercial

ant poisons commonly known as ant pastes consist of arsenic and syrup, but are made very strong in arsenic. This kills the foraging ants almost immediately. We found by reducing the arsenic to between one-fourth and one-eighth of one per cent they would take large quantities of the material to their nests and feed it to the young, and the whole nest would be killed by a slow poisoning. The most convenient way of exposing the poison to the ants is to use a large jar with a perforated cover and within it place a sponge saturated with the arsenic solution. The ants will enter through the perforations in the cover, fill themselves with the arsenic solution and carry it to their nests. The sponge will hold enough poison to require two or three weeks to empty it, and before that time the ants will almost entirely disappear."

Chicken Pox

About three weeks ago I noticed one poult with something like water blisters on the head. Soon another was similarly affected. I isolated them at once. Now a few more have developed the same symptoms. Their appetite is good and none have died. I would like to know the cause and cure. There is no scab, but some of the blisters have oozed a little. I have them in clean quarters and have put blue stone and kerosene in the drinking water.—Subscriber, Lakeside.

I think your turkeys have a mild form of chicken pox. It is a very infectious disease, and infection is often carried year after year in houses and fences and feed troughs that have not been disinfected after the disease has been in the flock. Calcium sulphide (sulphide of lime) is the only drug that seems to have any effect in controlling or preventing the disease. The dose is a grain for each bird to be treated, given every morning for a week in a small quantity of moist mash, and then every other morning for another week. Be sure the drug you get is fresh and strong. You can give this to the whole flock if the disease seems to spread. It may prevent some from taking it.—J. A. K.

Plymouth Rocks

Please inform me if yellowish feathers in backs of Plymouth Rocks are an indication that they are not pure bred?

Is five to six and one-half pounds considered large for a R. I. R. male bird for breeding purposes? Wish to raise a heavy breed.—Subscriber, Pond.

There must be some stain on the purity of Barred Rocks with yellowish fathers on the back, for no yellow or buff cross had any place in their making. I should not breed a bird with such a defect in color even though I knew there had been no out cross for many years, for it would spoil the color of later generations.

Standard weights for Rhode Island Reds are: Cock, 8½ pounds; cockerel, 7½ pounds; hen, 6½ pounds; pullet, 5 pounds. If you breed from a male that is under weight you will never have heavy stock.—J. A. K.

Articular Gout

White Rock hens have disease of legs. The legs and feet first become rough and after some time they get very knotty and then become inflamed and don't heal, so I am obliged to kill the hen. She seems healthy until the leg becomes inflamed. I have several kinds of hens but the White Rocks are the only ones having this disease. Do you know of any remedy?—Subscriber, Riverside.

This looks like articular gout, a disease due to the failure of the kidneys to eliminate the urates. Crystals of urate of soda are deposited in

nodules around the joints of the feet and toes, and these sometimes ulcerate. Advanced stages of the disease are seen only in old birds. When it has reached this stage it is considered incurable but is sometimes relieved by rubbing the legs and joints with camphorated or carbolic ointment. The birds should be kept in clean, comfortable quarters and given a great deal of green feed and very little animal food. A dose of Epsom salts (half a teaspoon to a bird) will help the kidneys to resume their function.—J. A. K.

Doctor Book for Stock

Can you recommend a good book for live stock, including horses and cattle?—Subscriber, Daggett.

The Farmers' Veterinarian, published by the Orange Judd Company, New York, or supplied by the Cultivator at \$1.50 is a good book. On more general topics we have "First Principles of Feeding Farm Animals," by the same author, C. W. Burkett. There is another good book by M. W. Harper, "Management and Breeding of Horses." Productive Feeding of Farm Animals by Woll is an excellent book, as is Feeds and Feeding by Henry. Along veterinary lines we may refer to two publications put out by the department of agriculture, Diseases of Cattle and Diseases of the Horse. It is possible these may be secured by writing your representative in congress or one of our state senators.

Water Garden

I am going to have an aquatic garden; my pool will be partly in the sun and partly inside the pergola, with a fountain in the center. Please tell me what plants to use for the shady side of the pool, blossoming plants. Also tell me if goldfish and trout will thrive in the same pool and what to feed them, how often, etc. I want to have more than one variety in the same pool, if practicable.—Subscriber.

A background of aquatic grasses with Japanese iris or some water-loving plant in the foreground will be excellent. Of course if you have large enough space a background of caladiums or elephant's ears is fine, but bear in mind these take an immense amount of space and overshadow everything else if crowded. It is hardly probable that trout will thrive in an ordinary shallow pool for the water becomes warm and the conditions are very different from those under which trout thrive. Variety may be secured, however, with different members of the goldfish family. As to feed, if the pool is large enough and algae are allowed to grow these will furnish all the food needed. However, bread crumbs—a few now and then—are relished by the fish. There is also a regular fish feed put up, but for fish in a large outdoor pool we do not think this is necessary.

Sudan

Is Sudan a valuable grass? Does it make good hay? What are the soil and water requirements? Will it stand more alkali than alfalfa? Does it require as much water as alfalfa?—Subscriber, Grafton.

Sudan may be grown with much less water than is required for alfalfa. It does not produce as much tonnage as the sorghums but makes a much better hay or fodder. We are not informed as to its resistance to alkali but assume that in this respect it is much the same as Johnson grass, to which it is very closely related. As a dry weather, warm climate, catch crop it is being tested in California and another year we will be able to give more definite information. The general impression is that it is very satisfactory. Write to Department of Publications, Washington, D. C., for Farmer's Bulletin 605, "Sudan Grass as a Forage Crop."

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The Household Department



THE OLD-FASHIONED DAYS

Backward, turn backward, oh, Time, in your flight!
Let's be old-fashioned again for to-night;
Drink from the moss-covered bucket we knew
Back in the days when bacilli were few;
Never a thought of a germicide then, Yet the babes grew into big, stalwart men.
Backward, turn backward, to boy-days serene
When people knew nothing of germs or hygiene.

Backward, let's go to the old country school,
Simply forgetting each sterilized rule;
Drink from the rusty tin dipper, nor fear
That millions of microbes might be lurking near.
Put up the gargle, bichlorides and spray,
Chuck all the new antiseptics away!
Backward, turn backward, once more, if you please
Ere everyone worried about some disease.—E. A. Brininstool.

THE HOUSEHOLD CONTEST



WHAT use do you make of dried fruits in your cookery? Is there anything better than sun-dried peaches, apricots, prunes, raisins, etc.? Here in California where we have so much fresh fruit the year around do we use less dried fruit than we might? The Cultivator wants to see its household department in the issue of October 21 filled with recipes for the using of our dried fruits.

For the best there will be a cash prize of \$2.00, for the second best, \$1.00. All whose recipes are published will receive three months' extension of subscription, if they have not already secured such extension this year. With your article send name and address of member of your family now receiving the Cultivator that the extension may be properly credited. Or, of course, a new subscription may be started instead.

Write Early

Send your recipes to Household Department, California Cultivator, Los Angeles, by the morning of Thursday, October 14. Please use one side of paper only. With your recipe we will be glad to receive suggestions for future contests.

Prize Winners This Month

First prize, Mrs. A. C. Pickett of Riverside; second, Mrs. Floy Crosby Smith, Fair Oaks. Mrs. Pickett's suggestion of a written list for the children's work seems a very happy one. We wonder if other mothers have tried it.

SATURDAY, A HAPPY DAY

By Pansy A. Laughlin, Escondido

Saturday may become a day less to be dreaded if the homemaker will finish up as much of her work as is possible on the other work days and simplify her preparations for Sunday. Saturday used to be the day that I disliked the most. Now, I like it. In former times there was usually a bit of washing to do, and a little ironing that had been left over, and some sewing to finish up and cleaning and scrubbing and cooking. There might even be some of the children's heads to be washed or a few windows to be cleaned. Anyway the day was so full and long and hard that it was quite impossible for me to keep the Sabbath day holy because I was so worn out. Then I decided to make a change in my work.

Now every bit of washing, ironing, sewing, scrubbing, special cleaning, etc., is done on some other day of the week. On Friday the house is swept and dusted and each member of the family "helps mamma" by being careful not to get things dirty before Sunday. (This plan incidentally teaches them to keep the house neater during the rest of the week). Early in the week the Sunday clothes are cleaned and mended and put away in certain places where each member of the family can get them. Then when Saturday comes I have the usual three meals to get, the bedrooms to straighten up, the children to look after and the Sabbath dinner to prepare.

Instead of cooking most all day Saturday to prepare a Sunday dinner, I plan a simple dinner but a good one and prepare things we haven't had for a little while. Instead of wearily beating eggs, creaming butter and sugar and icing an elaborate cake I beat up a dainty cottage pudding while I am preparing Saturday's dinner and bake it in gem pans. At the same time I make a rich lemon sauce, and most people who have eaten this desert at our house seem to enjoy it. I know we do. For a sample menu for a simple dinner I would suggest stewed chicken, potatoes, peas and cottage pudding. Or one may have a nice pot roast with potatoes and tomatoes and melons or fruit for desert. You can

readily see that dinners of this kind may be mostly prepared on Saturday with very little time and labor.

So Saturday in our home is really a preparation for the Sabbath. We have time to put a few flowers around and enjoy our anticipations. For only when the mother is happy and not worn out can the home be a happy one. And Sabbath day is the happiest and best day in the week for us.

THE HOUSEWIFE'S BUSY DAY

By Mrs. Floy Crosby Smith, Fair Oaks

When there rests upon the shoulders of one woman the responsibility and care of a large family of children the law of self-preservation compels her to seek ways and means for conserving her own time and strength. So from my own experience I would suggest as a means of making Saturday a less strenuous day, beginning working toward that object at the other end of the week. One does not need to carry this to extreme as did the Aunt Maria who in her eagerness to get ahead of her work always improved her opportunity when cooking a meal by baking a pan of soda biscuit to have ready for the following meal.

Still if one does not wish to become hopelessly engulfed in work it seems necessary to have a general plan of action.

My own plan has been to do the heavy work the first of the week, following the Sunday rest. Then when the washing and ironing are safely out of the way instead of looming a black cloud ahead, the middle of the week is left for sewing, canning or any other extra work.

Friday morning I change the beds, sweep the house from top to bottom, and do any extra cleaning that may be required upstairs. I arrange my bread making so the dough can be mixed just before bedtime. Saturday morning the bread goes into the pans while the fire is starting. After breakfast I heat the oven and bake whatever I shall need for Sunday and the wash day following. By the time this is done the bread is ready to go into the hot oven, and while keeping a watchful eye upon it I mop the kitchen and dining room floors. So by time to start dinner the dreaded "Saturday's work" is out of the way.

If there are windows to wash or cupboards to clean do them some cool morning during the week, don't let such jobs accumulate for Saturday.

I usually devote Saturday afternoon to odd jobs so I may start the next week with a clean record and no leftovers. Perhaps there are some new garments needing only button holes to complete them, some piece that needs mending before it goes into the wash, a suit that needs cleaning, a door yard or flower bed that needs attention or even a letter to write.

On a busy day, the children, even if quite small, can be a great help, as with a little instruction at first, they can do the dusting, pick up scattered articles, scrub porches, etc.

Another thing that saves time all through the week is planning the meals for a day ahead. While doing the kitchen work in the morning I think out the bill of fare for the three following meals. At first this may seem a task but it soon becomes a habit which is followed almost unconsciously. By knowing exactly what you will need you can make one trip to the garden instead of three, you will know just what you want when the butcher's wagon or the vegetable peddler arrives, will often save both time and fuel by cooking for two meals at once, and will usually have the solution to the housewife's constant puzzle, "what shall I get to eat?"

It is impossible to follow any iron-clad rules for things will claim your time—the stove may smoke or the clothes line break, or the baby refuse to take his nap; but by fitting each day's work into its proper place, Saturday will fall into line with the rest and cease to be a bugbear.

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Timely Suggestion to Ranchers

Now is the best time to fix up your fencing and repair poultry houses, barns, roofs, etc.; before wet weather. Get our prices on fencing, poultry netting, repair lumber, etc.

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Fine Interior Finish, Oregon Pine, dry sand-
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Los Angeles, Cal.

SATURDAY'S WORK

By Mrs. A. C. Pickett, Riverside

Housekeepers are tempted to crowd the unfinished work of the entire week into Saturday. This added to the necessary work makes the day often a bugbear. I have discovered that it is a wise plan to sit down quietly with pencil and paper early in the morning of Saturday (and other mornings as well), making out a schedule for the day, also menus for the day and Sunday. I teach in Sunday school and never get home from church until after noon, so plan a dinner that can be put on the table in a few minutes. Here the fireless cooker lends its aid, especially in winter. A good substantial dish of chicken and dumplings, Spanish stew and dumplings, home-made tamales, baked beans, something of this kind hot with the dessert and other things prepared on Saturday, make an acceptable meal, much better than having the hungry family waiting for things to cook while good impressions from the service fade away.

I try not to have any cleaning to do on Saturday except kitchen and pantry after baking is finished, and never can fruit if it can be avoided or start new sewing.

If there are school children in the family, this is the day we have their help. It should be a happy day for them but all play does not necessarily make a happy day. I have found that the written "list" works well with children, also. All the odd jobs and regular chores and suggestions as to pleasures are written down for my thirteen-year-old boy. He likes it much better than to be constantly called to do this or that. He can do the work early in the day and then amuse himself or alternate work and play, just as he chooses, only the work items on the list must be crossed off before evening. The plan works even better with girls. It is almost like a game. I have seen the children consult their lists (which they carry in their pockets) when playmates come to visit them, and say, "Well, I only have such and such things to do yet." Often the playmates choose to help with the work and so have more time for play. I try never to add to their work later in the day as that discourages them.

Little children, especially, love to eat out of doors, anything savoring of a picnic delights them; a few ants or flies, a hungry dog or kitten do not disturb them. Adults prefer the screened dining room. My children ate their suppers on the lawn half the time in the summer or carried their basket and melon to "camp" under some tree farther away. Very few dishes were used and these the children washed. To a tired mother it is often restful to eat a meal with no children to wait on.

Interruptions are more often the rule than the exception to the housekeeper with no paid helper (either in town or country). All the more important then to have a time and place for rest and recreation every day, for a tired out mother can not be an efficient homekeeper.

SATURDAY WORK

By Mrs. G. A. Giber, Cohasset, Minn.

Since my Saturday's suggestion must come from experience on a large farm I am afraid it will hardly be applicable or practical for the California home where the butcher, baker, grocer and laundryman are always at one's command.

On Friday I clean thoroughly everything as far as the kitchen, also the men's bunk, and since our men come direct from the field to meals we dine in the kitchen, thereby saving a great deal of work as well as making it unnecessary for me to touch the rooms previously cleaned until Sunday morning, when I give them a light dusting and arranging.

I have found the most essential thing to remember is the value of the early morning hours. I get up at 5:30 and by 6:30 breakfast is over and the men ready for the field. Then I carefully pile up my dishes and make up the bread. Next I bake my cakes and while they are cooling prepare the pies. By the time they are baked the cakes are ready to frost. Then I wash both baking and breakfast dishes and if I am having chicken for Sunday dress them

and put on ice. After this I clean the kitchen, with the exception of the stoves which I leave until after dinner. I forgot to mention that immediately after breakfast I put the boiler of water on and just before cleaning the kitchen soak my clothes in a solution of soap and ammonia. This gives me an early start for Monday and by 8:30 or 9:00 the washing is done.

Salad dressing, puddings, etc., I leave until Sunday morning, so with the exception of the stoves I have only the bunkhouse and creamery for the afternoon. By 2:30 or 3:00 I am usually through and have a few hours for my own recreation. I have each day's work mapped out and try to follow it as systematically as I can. I have never had any extra help, even at threshing time, and always find plenty of time for my reading and correspondence.

SATURDAY WORK

By Mrs. A. C. Pickering, Fullerton

I plan to do the weekly sweeping and dusting on Friday and usually try to bake bread on that day.

The first thing after breakfast on Saturday I place my pies in the oven, then wash the dishes. When this is finished I stir up a cake and by that time the pies are done, and the cake is placed in the oven. While it is baking I make beds and straighten up the house. The bread is always out of the oven by 1:30 and by 2:00 o'clock all the Saturday work is done.

HOUSEHOLD QUERIES

Mock Whipped Cream

Please give recipe for mock whipped cream made from the white of eggs. —Subscriber, Chino.

We have never heard of a recipe for making whipped cream entirely of white of eggs but believe a cream is made of a mixture of cream and white of egg beaten until of the desired stiffness. A pinch of salt will often hasten the thickening. Where one has thin cream not thick enough to whip alone the addition of the juice of half a lemon to a half pint of cream will cause it to whip as well as the regular whipping cream. The pulp of ripe bananas run through a sieve and added to the white of egg and beaten stiff is said to make a very nice cream filling. We give recipes for mock cream and marshmallow frosting.

Mock Cream

Scald one pint of milk in a double boiler; stir two level teaspoons of cornstarch with two or three tablespoons of cold milk, then stir into the hot milk; let cook ten minutes; add one-fourth teaspoon of salt and two tablespoons sugar and let chill. Fold in the whites of two eggs.

Marshmallow Frosting

In a saucepan heat slowly to the boiling point without stirring three-fourths cup sugar and one-fourth cup milk, then boil six minutes. Break one-fourth pound marshmallow into pieces, melt in a double boiler, add two tablespoons hot water and cook until the mixture is smooth. Then add the hot syrup gradually, stirring constantly. Add one-half teaspoon vanilla, then beat until thick enough to spread.

Canning Sweet Peppers

Can you tell me how to put up pimientos similar to those we buy? I have a good many and would like to can them if possible. —Subscriber, Orland.

From a former Cultivator we reprint method of canning peppers. Cut open green or bull nose peppers, clean out seeds and cut in strips the size of a string bean. Pack into jars which have been rinsed in warm or cold water and cooled. Cover to the brim with salt water (one pound salt to seven gallons of water). Rinse cap in cold water and place on jar but do not clasp or screw down as the steam which forms inside must find an outlet. Place a board with holes in it or a few pieces of lath nailed crosswise in bottom of boiler. Set jars on this rack and pour water in, filling even with neck of jars. Heat gradually to a boil, then boil for three hours. "Boiling" does not mean "simmering." Count time from the time water begins to boil and keep boiling steadily for the full number of hours

specified. Keep lid on boiler. Remove jars while boiling hot and set aside to cool. Do not set on a cold or wet surface or in a draft.

Cold Water Process—Cut off stem end of peppers and remove seeds. Parboil until tender but do not cook long enough to cause them to lose their shape. Pack in jars, pour cold water over them and seal. They are ready for use any time during the win-

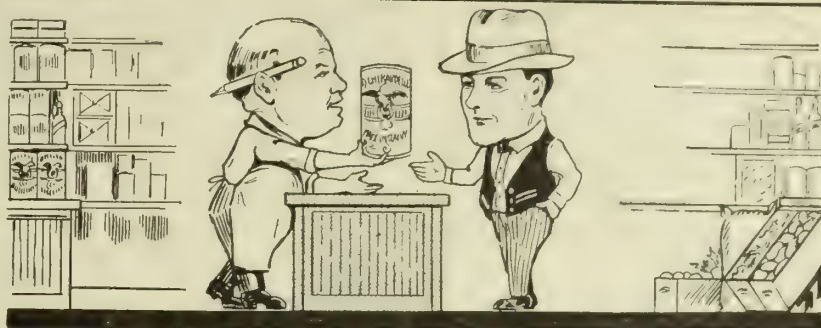
ter and may be used for stuffing with coldslaw, leftover meats, etc.

Preserving Cider

Will you kindly inform me how to stop cider from working when it has reached the desired degree of sharpness?—Subscriber, El Monte.

To each 22 gallons of cider to be

(Continued on Page 287)



"Fred"—

"Put this can of Ghirardelli's Ground Chocolate in your basket. You'll find it the most convenient, nourishing, delicious, economical food beverage you can get. There are imitations but I don't handle them as my trade always demands Ghirardelli's."

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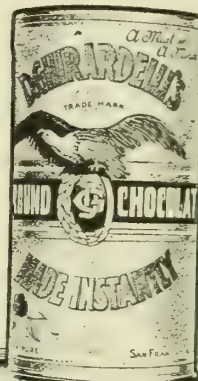
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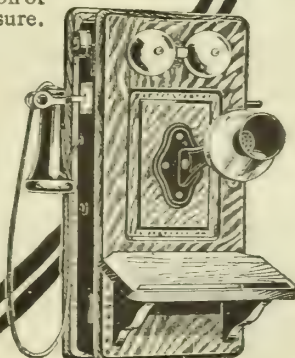
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Write for Bulletin 24.

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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, Sept. 15, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
Arizona Longhorn17@17½
California Fresh13½
Cheddar20@21
Domestic Swiss20
Eastern Daisy18½
Imported Swiss40
Longhorn17@17½
Oregon Triplets14½@16
Tillamook15½@16

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts33
Candled35@37
Northern Fresh Extras, f. o. b. S. F. 36½
Other Outside Stock32

Prices to producers:
Hens, lb.12@16
Roosters, old9
Broilers, lb.20
Fryers16
Roasters, lb.16
Turkeys16@18
Ducks13
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:
Hogs, 175 to 200 lbs., per cwt.7.50
Prime Steers7¼@7½
Helfers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lb.2¼
Northern Burbanks1.25@1.30
Shimas1.35@1.40

ONIONS

Wholesale selling price:
Boiling Onions, crate1.00
Pickling, lug1.25
Brown, cwt.1.10
White Globe, lug75
Garlic10
Sets, White and Brown, lb.10

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax5½@6
Limas3½@4
Green5½@6
Cabbage, sack70@75
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.50@75
Chicory, doz.40
Chives, doz.1.00
Corn, lug45@50
Cucumbers, lug30@35
Pickling, lug1.00@1.50
Egg Plant, lb.3@3½
Escarole, doz.40
Horseradish, lb.10
Leeks, doz.40
Lettuce, doz.30
Mint, doz.40
Okra, lb.4@5
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone4@6
Peppers—
Chili, Green3@3½
Bells3½@4
Rhubarb—
Crimson Winter, box75
Strawberry75@85
Spinach, doz.20
Squash—
Crookneck, box35
Hubbard, lb.1½@3
Summer, lug30@35
Tomatoes—
Lug45@50
Turnips30

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders65@85
Bellflower80@90
Gravensteins65
Skinner's Seedlings1.00
Crabapples, box1.35
Bananas, lb.4
Berries—
Strawberries, tray75@1.00
Blackberries, tray75
Raspberries, tray80
Cantaloupes—
Paul Rose, crate1.15@1.25
Columbia, large crate1.50
Pineapple, crate1.25
Casabas, crate1.50
Cranberries, lb.16@17½

Figs—
Black65@85
White65@75
Grapes—
Black Hamburg, lug70@75
Malagas, lug80@85
Morocco1.25
Muscats, lug1.25
Concord, crate1.25
Seedless Sultanas, lb.3½
Thompson Seedless, lug1.00
Tokay, lug1.00
Guavas, lb.6
Nectarines, lug1.65
Peaches—
Clings, box65
Freestones, lug55@65
Elbertas, lb.1½@2
Pears, Bartlett, box1.75

Plums—
Hungarian1.75
Kelsey65@75
Tragedy, lug1.75
Pineapples, lb.4½@5½
Quinces, lug50@70
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons1.50@2.00
Juice Lemons1.00
Grapefruit, Seedless4.00
Limes, basket1.00
Valencias4.50

DRIED FRUITS

Wholesale prices to retailers:
Evaporated Apples, Fancy, boxes, 7½@8½
Apricots8½@16
Peaches5@7
Pears, lb.11
Prunes7½@12½

NUTS

Prices named by California Walnut Growers' Association are:
No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Almonds, New—
I X L17@17½
N. P. U.16½@17
Drake, Thin Shell18@18½
Peanuts—
California, Raw6
Japan5½@6
Eastern7@7½
Chinese5

HONEY

Wholesale selling price:
Comb, Fancy, Water White16
White15
Extracted Water White8½
White7
Light Amber6
Beeswax25

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Limas5.35
Bayous6.00@7.00
Lady Washington5.25
Pinks4.50
Black Eyes4.50
Lentils12.50
Small White5.00
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Following prices are on new hay.
Barley Hay12.00@14.00
Wheat Hay10.00@13.00
Tame Oat12.00@16.00
Alfalfa10.50@13.00
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.20
Corn, White2.30
Wheat2.05@2.10
Oats, White1.90
Oats, Hulled2.25
Egyptian Corn2.10
Kaoliangs1.60
Barley Seed1.55

Barley, Hulled1.90
Kaffir1.85
Milo1.75
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles.
Bran, Heavy1.70
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.2.25
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.50
Rolled Oats1.95
Middlings2.00
O. & W. Middlings1.80
Feed Meal2.30
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40

San Francisco Market

SAN FRANCISCO, Sept. 14, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh, Extras28
Prime Firsts25
Firsts24½

CHEESE

Wholesaler to retailer.
Young America11½@13½
California Flats8@11½
New York Cheddar20
Oregon Twins13

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Price to producer:
Fresh, Extras36½
Select Pullets30½
Hens, lb.13@17
Fryers22@23
Broilers23@28
Roosters—
Young20@22
Old8@10
Squabs2.00@3.00
Turkeys17@24
Ducks12@15
Geese11@15

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Helfers3@5½
Calves, lb., live wt.6@9
Hogs4@7½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7@7½

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.25@1.50
Belta Burbanks, cwt.35@85
Sweets1.75@2.00

ONIONS

Wholesale selling price:
Onions, cwt.40@60
Garlic, New7½@8

VEGETABLES

Wholesale selling price:
Beans—
String, lb.2@4
Limas, lb.2½@3½
Wax, lb.2@4
Celery, doz.25@40
Corn, sack75@1.25
Cucumbers, lug20@30
Eggplant, lug40@60
Okra, lug50@70

WEATHER CONDITIONS

For the Week Ending September 11, 1915.

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date
Eureka	.00	.26	.45
Red Bluff	.00	T	.13
Sacramento	.00	.01	.08
San Francisco	.00	.01	.01
San Jose	.00	.04	.09
Fresno	.00	T	.00
Independence	.00	.04	.00
San Luis Obispo	.00	.01	.05
Los Angeles	.00	.00	.00
San Diego	.00	T	.00

Temperature Data

	—Past Week—	Maxi-mum	Mini-mum
Eureka	62	48	
Red Bluff	98	56	
Sacramento	92	54	
San Francisco	74	54	
San Jose	84	48	
Fresno	96	52	
Independence	88	54	
San Luis Obispo	76	52	
Los Angeles	82	52	
San Diego	76	54	

Peppers—
Bell, box30@40
Chili, Mexican, lug25@35
Rhubarb75@1.00
Squash—
Cream50@60
Summer, lug35@50
Tomatoes, lug20@45

FRESH FRUIT

Wholesale selling price:
Apples—
Alexanders75@1.00
Bellflower60@90
Gravenstein70@1.10
Bananas, Hawaiian, bunch1.25@2.00
Blackberries, chest3.00@4.00
Cantaloupes—
Turlock Ponies50@60
Turlock Standard65@75
Figs, box, single layer, black55@65
White, single layer30@40
Grapes—
Black40@65
Thompson Seedless, crate85@1.00
Tokay, crate50@60
Muscat, crate65@75
Muskmelons, box75@1.00
Huckleberries, lb.5@6½
Nectarines, Red, crate50@75
Peaches, wrapped40@60
Pears, Bartlett, wrapped75@1.00
Lake County, wrapped1.10@1.35
Pineapples, doz.1.00@1.75
Plums, crate65@85
Prunes, crate90@1.00
Raspberries, chest6.00@8.00
Strawberries, chest2.00@4.00
Watermelons, doz.1.00@2.50

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50@3.50
Lemons1.50@2.75
Limes, Mex., cs.4.00@5.00
Valencias3.50@4.25

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3½c. All outside sections ¼c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Choice Fancy
Apricots5¼c 6¼c 7 c 7¼c
Peaches3¾c 3¾c 4 c 4½c
Pears7 c 8 c 9 c 10 c

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3½c. All outside sections ¼c lower.
Other Fruits, Stand-Extra
50-lb. boxes—ard. Choice Choice Fancy
Apricots5¼c 6¼c 7 c 7¼c
Peaches3¾c 3¾c 4 c 4½c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5¼c; Thompson seedless, No. 1, 16-oz., 7¼c; 12-oz., 6¼c; 50-lb. cs., 6½@6¾c; Sultanas, 16-oz., 7¼c; 12-oz., 5¼c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds—
The supply of old crop almonds has been exhausted for some time. From what we have been able to learn quotations are as follows:
Nonpareil16
I. X. L.14
Ne Plus Ultra13½
Drakes12
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.90@4.95
Pink3.75@3.90
Black Eyes3.25@3.50
Cranberry4.15@4.25
Small White4.75@4.85
Garbanzos3.50@3.75
Large White4.50@4.60
Bayou4.50@4.60
Manchurian Speckled Bayous4.00@4.25
Red Mexican4.75@5.00
Red Kidney6.00@6.25
Horse Beans2.00@2.25

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new10
Extracted White6½@7½
Light Amber3½@4½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley8@10
Sonoma-Mendocino11½@13
Oregon Clusters11½@13

HAY

Under date of September 11, 1915, Scott, Wagner & Miller say:
Receipts of hay for the past week were 4047 tons. Although receipts are large they moved off readily and prices have been firmly maintained. Very little choice hay of either wheat or red oat has arrived during the week. The few cars that did come in sold readily at top quotations and we believe an advance can be looked for.
The fields are cleaning up rapidly and the next two weeks will see most of the

hay under cover, after which it is natural to expect advance in prices to at least cover storage charges. Export trade is about as usual.

Choice alfalfa (third and fourth cuttings) from the river districts is very strong and in light supply, whereas interior hay is not much sought, arrivals of same being nominal. Straw is without interest, demand being very light.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Wheat Hay (1st bale)	14.00@15.50
No. 1 Wheat or Wheat and Oat	12.00@13.50
No. 2 Wheat or Wheat and Oat	8.50@10.50
Choice Tame Oat	12.00@13.50
Other Tame Oat	9.00@11.00
Wild Oat	7.00@10.00
Alfalfa	10.00@13.00
Stock Hay	5.00@6.00
No. 1 Barley Straw	25@40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.52 1/2 @ 1.55
Barley Feed	1.15 @ 1.20
Corn, Eastern Yellow	1.77 @ 1.79
Oats, Red, Feed	1.32 1/2 @ 1.35
Oats, White, Feed	1.40 @ 1.42 1/2
Oats, Black, Feed	2.00 @ 2.25
Millet	2 1/2 @ 3 1/4
Flaxseed	3 @ 5 1/2
Rye	2.00 @ 2.25

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	15.00@16.00
Brn, ton	27.00@28.00
Feed Cornmeal	42.00@42.50
Cracked Corn	42.00@42.50
Rolled Barley, ton	25.00@26.00
Middlings	31.00@33.00
Shorts	27.00@28.00
Oilcake Meal	37.50@39.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Sept. 15, 1915.

A slightly better condition obtains as to all citrus fruits; orange shipments are decreasing somewhat in number and Eastern markets are receiving a smaller quantity of their local fruit. The best grade Valencia is commanding \$3.75 to \$4.25 f. o. b. California.

A streak of warm weather has given a healthy movement to the lemon market. The quantity of stock in the market has been cleaned up and prices are now running at from \$2.25 to \$3.00 f. o. b. California. This only for the very best grade of fruit.

Shipments

Shipments of oranges to date from Southern California since November 1, 1914, 31,657 cars, lemons 6268, total 37,925. To same date last season: oranges 36,183, lemons 2689, total 38,872. Central and Northern California shipments are same as given in last issue.

NEW YORK, Sept. 13.—Eleven cars Valencia, eight cars lemons sold. Market from 15 to 20 cents higher on Valencia, 25 to 50 cents higher on lemons. Fair.

VALENCIAS—	Ave.
Old Mission, xf, Chapman	5.60
Old Mission, fy, Chapman	5.25
Golden Eagle, sd., Chapman	4.85
Lady Rowena, Chapman	3.65
Euclid, Growers Ft. Co.	4.70
Uplanders, Growers Ft. Co.	4.50
Rosemont, Growers Ft. Co.	4.00
Mt. of Olives, Growers Ft. Co.	5.45
Olive Heights, Growers Ft. Co.	5.00
Angeles, Growers Ft. Co.	4.65
Big Four, Growers Ft. Co.	4.95
Orchard, Nat. O. Co.	5.10
Standard, Nat. O. Co.	4.50
Plain Ends	3.00
Aurora, Amer. Ft. Dis.	5.25
VALENCIAS—Halves—	Ave.
St. Bernard	1.80
LEMONS—	Ave.
Limoneira Co., Selected, vent.	3.20
Loma, ventilated	2.55
Pet	2.00
Greyhound	1.50
Limoneira Co., Selected, vent.	2.50
Loma, ventilated	2.00
Queen Bee	1.75
Royal	1.40
Aeolus, ventilated	2.40
Corus, ventilated	1.85
Trail, ventilated	1.05
Canyon, ventilated	.75
Squirrel	2.05
Corona Beauty	1.65
Grove	1.35

CINCINNATI, Sept. 13.—Four cars sold. Market is unchanged.	
VALENCIAS—	Ave.
Acme	3.10
Liberty	3.90
Val Vista	3.55

CLEVELAND, Sept. 13.—Three cars sold. Market is steady on oranges, strong and higher on lemons.	
VALENCIAS—	Ave.
Mother Colony, S. T. Ex.	1.45
Balboa, S. T. Ex.	3.70
El Pavo Real, S. T. Ex.	2.30
LEMONS—	Ave.
Pico, S. T. Ex.	2.40
La Puente	1.55
Swallow, O. K. Ex.	2.95

BOSTON, Sept. 13.—Ten cars sold. Market is unchanged on oranges, doing better on lemons.	
VALENCIAS—	Ave.
Caledonia, Placencia, M. O. A.	4.35
Albion, Placencia M. O. A.	3.85
Apex, O. K. Ex.	4.70
Majesty, O. K. Ex.	3.65
Rey, S. T. Ex.	4.95
Tunnel, S. T. Ex.	4.50
Echo, S. T. Ex.	4.95
Arroyo, S. T. Ex.	4.50
Quall, O. K. Ex.	4.80
Alta Loma, O. K. Ex.	4.30
Red Spray, O. K. Ex.	3.90
Owl, O. K. Ex.	2.45

LEMONS—	Ave.
Maduro, Q. C. Ex.	1.30
Grove	1.00
Trail, A. C. G. Ex.	1.30
Canyon	.90
Liberty, E. F. G.	2.50
El Dorado	1.50
Tunnel, S. T. Ex.	1.85
La Habra, S. T. Ex.	2.60
Reliable	1.80

PHILADELPHIA, Sept. 13.—Seven cars sold. Market is higher on Valencia; firm on good stock lemons.

VALENCIAS—	Ave.
O How Good, xf.	5.10
Cottontail, J. A. Maddock	4.80
Olive Heights, Growers Ft. Co.	4.60
Angeles, Growers Ft. Co.	4.45
Big Four, Growers Ft. Co.	4.05
Foothill Beauty, Or. Ex.	2.75
Golden Beaver, Or. Ex.	4.75
Saddleback, Or. Ex.	4.15
LEMONS—	Ave.
Maduro, Q. C. Ex.	1.15
Grove	.75
Coyote, O. K. Ex.	1.35
Blue Jay	.65
Silver Cord, V. C. Ex.	1.00
Selected, V. C. Ex.	1.95
Loma	1.80

ST. LOUIS, Sept. 13.—Four cars sold. Market steady on both Valencia and lemons.

VALENCIAS—	Ave.
Blue Gate	4.00
Green Gate	3.55
Foothill Beauty, Or. Ex.	2.80
Saddleback, Or. Ex.	4.05
LEMONS—	Ave.
Homer, Q. C. Ex.	1.85
Questa	1.65
Camel	1.65
Pet, S. D. Ex.	2.15
Arab	2.10
Greyhound	1.85
Pup	1.65
Buck	1.65

PITTSBURGH, Sept. 13.—Six cars sold. Market higher on good quality oranges and lemons.

VALENCIAS—	Ave.
Naralimo, Sparr Ft. Co.	4.55
Circus, Sparr Ft. Co.	4.10
Victory	3.25
Crafton Special, R. H. Ex.	4.50
Cornucopia, R. H. Ex.	3.75
LEMONS—	Ave.
Setter, A. H. Ex.	2.00
Palm Tree	.95
Commerce	.60
Red Flag, Q. C. Ex.	1.80
Cry Baby	1.90
Homer, Q. C. Ex.	2.00
Camel	1.75
Family	2.05

CHICAGO, Sept. 13.—Some of the cantaloupes arriving today from California were too green and hard; standard cases sold at 2.00@2.25; fancy stock up to 2.75; pony crates, California, 1.50; flat cases, pink, 1.00@1.15; Colorado pinks, 5 under California. Casabas, standard crates, California, 2.50; cases, 1.50. Osage melons, Jumbo crates, 1.25@1.75. Grapefruit, boxes, 5.25@6.25. Oranges, boxes, California Valencia, 4.50@5.00; seconds, 3.50 @4.25. Lemons, boxes, California, 2.25@3.00. Plums, cases, 4 baskets, Giants and Hungarians, 1.25@1.40; Kelsey, 1.00@1.25; Diamond, Italian, Gross and Silver Egg, 75@1.10. Grapes, cases, 4 baskets, Tokay, 1.60@2.00; seedless, 1.15@1.25; Malaga, 1.00@1.25. Pears, California Bartlets, 50-pound boxes, 2.00@2.25; Washington, 1.75 @2.25. Peaches, boxes, 20 pounds, California Elbertas, 65@75.

SOLANO COUNTY FARM BUREAU HORSE SHOW

Written for California Cultivator
By J. W. Mills

The biggest event in the history of Solano was the Farm Bureau Horse Show on September 9th. The procession counter-marched on Main Street and 120 head of blooded stock, groomed and decked in the colors of the Spanish settlers of old, produced a sight that made the lovers of horses thrill. The board of supervisors of Solano County headed the parade on a float drawn by four handsome draft horses entered by a San Francisco firm.

Among the pure blood Percherons, prize winners were owned by the following: Percy Anderson, P. Drouin & Company, Rio Vista Horse Company and Rubel Estate, all of Rio Vista. Belgian stallion by Drouin & Company. Shires owned by Neil Anderson, John McCormick and E. W. Westgate, won prizes in five different classes.

Grade horses drew nine prizes and mules and jacks carried off seven prizes.

Prof. C. W. Rubel, farm adviser of Alameda County, acted as judge of the stock and although it was a difficult undertaking, expressions of satisfaction were heard on all sides, even from those who did not carry off first prizes in some instances.

Dean Barrows of the state univer-

sity delivered the address of the day and the Vacaville brass band furnished music.

In the afternoon water sports and music entertained the crowd of about 2000. Speed launches, tugs of war, high and fancy diving by members of the Olympic Club of San Francisco, yachts and swimming races kept the Sacramento river opposite the grandstand well churned before a delighted audience all the afternoon. A water pageant in the evening followed by a grand ball completed a well-filled day and thus ended Solano County's first farm bureau celebration.

HOUSEHOLD QUERIES

(Continued from Page 285)

preserved add 154 grains of bismuth subnitrate. It must be borne in mind that cider preserved in this way could not be offered to the trade without announcement of the preservative being used. The best method of preserving cider is to place in bottles in water bath and raise to a temperature of 160 degrees and hold there for 20 minutes. Seal while hot. No preservatives are needed and the drink is absolutely pure.

Cider

Please tell how to make a good apple cider and how to keep it sweet.—Subscriber, San Bernardino.

There are small hand cider mills and presses combined which enable one to crush and press out the juice. The "making" of cider is simply the pressing of the juice from the crushed apples. A chemical preservative is given above. The better method, however, is the sterilizing by heat and bottling. While more expensive this leaves the juice absolutely pure, when it may be sold if desired.

TO MAKE FARMS PROFITABLE

To help California farmers find out how to make their orchards and ranches more profitable and how to make the most of farm and community life is the object of the annual farmers' short courses as announced by the University of California for the university farm at Davis from October 4 to November 12, 1915.

The University of California has decided upon the novel plan of announcing exactly what will happen at every hour of every day throughout those six weeks, so that farmers who go to Davis for practical work may attend exactly those lectures and demonstrations which hit their own particular needs.

Before leaving home, for example, the prospective student will know that on the afternoon of November 2 he can practice under the direction of Professor G. H. True the judging of dairy bulls; that on the afternoon of October 21, Dr. F. M. Hayes will show him how to vaccinate swine to prevent hog cholera; that on the afternoon of October 18 Professor A. V. Stubenrauch will discuss how neighbors may cooperate for fruit marketing; and that on the morning of October 14 Professor R. L. Adams will tell how to economize and eliminate waste on a poultry farm.

There are to be courses in general agriculture, dairy manufactures, poultry husbandry, and in horticulture, including deciduous fruits, citrus and tropical fruits, viticulture, and olives.

The full 779 acres of the university farm will be the classroom for these visiting farmers and their wives. The methods of both dry farming and irrigation will be displayed. Among the laboratory apparatus are a well equipped commercial creamery, a stock pavilion, mechanical shops, four silos, 200 head of dairy and beef cattle, representatives of six breeds of sheep and of milch goats and angoras, half a

dozen different breeds of hogs, 500 varieties of grapes planted in 30 acres of vineyard, 15 acres of almond, peach, prune, and apricot orchards, and 60 acres devoted to experiments with field and forage crops.

All the courses are for six weeks, save that in dairy manufactures, which will last from October 4 to November 24. Applicants for admission must be at least 18 years of age. Women are welcome.

TIMBER IN CALIFORNIA

Timber to the amount of 43,893,000 board feet, valued at \$96,105.02, was cut from the national forests in California during the fiscal year ending June 30, 1915. Of this amount 35,841,000 feet were cut for commercial purposes, 1,274,000 feet were used in the improvement of homesteads and farms, and 6,778,000 feet consisted of dead timber and other material whose removal was beneficial to the forest and for which no charge was made. 3989 separate transactions were involved, of which 883 were sale contracts and 3106 were free permits.

Timber for the improvement of homesteads and ranch property is sold at a rate merely sufficient to offset the cost of administering the sales. In California this rate is 50 cents per thousand feet and 25 cents per cord. Prices for commercial timber range from 50 cents to \$5.00 per thousand feet according to species and accessibility.

RUST PROOF

"Defeating Rust" is the title of a most interesting illustrated booklet published by the American Rolling Mill Company of Middletown, Ohio. The same concern is also putting out Armco-Iron Rust Resisting Products. We believe the great secret of this high grade product, which is claimed to be almost entirely rust proof, is that it is simply pure iron without impurities. "Quality" is the slogan of the Armco people.

These are interesting booklets for anyone who wishes information regarding roofing, siding, tanks, culverts or any form of iron which is subject to rust. We think they will be mailed upon request if the Cultivator is mentioned.

The Book
Citrus Fruits

520 Pages
25 Chapters
151 Illustrations

Should be in the hands of every California Citrus Grower.

An account of the Citrus Fruit Industry with special reference to California requirements and practices, and similar conditions.

By J. Eliot Coit

Professor of Citriculture in the University of California, and Citriculturist to the University of California Agricultural Experiment Station. Formerly Superintendent in charge Citrus Experiment Station, Riverside, California.

The kind of book we have had hundreds of calls for, but never before have been able to supply.

Price, Book alone, \$2.00 net.

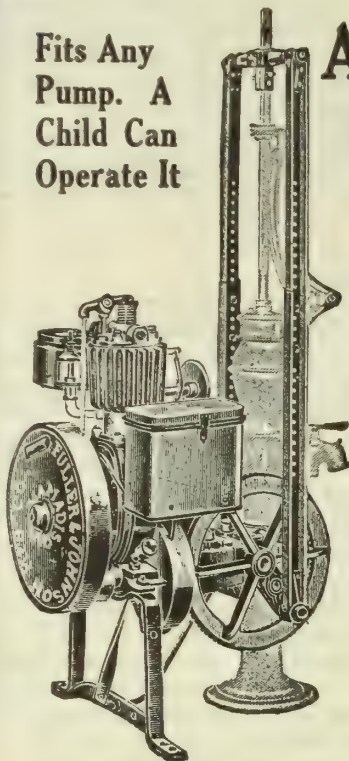
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Child Can
Operate It



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This Farm Pump Engine should be on every farm, not because of the time, work and money it saves but because of its great adaptability for all kinds of farm labor. This engine will supply from 270 to 2450 gallons of water per hour on the hottest, coldest and calmest days. It will enable you to have all the water you want for your stock, household use and for washing your wagons, farm implements, etc. And in addition, the

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will run your cream separator, washing machine, churn, grinder or any other mechanism that is run by hand power. This Farm Pump Engine runs steadily, easily, without watching and without vibration. It comes to you ready for instant use, there are no extra parts to buy and it can be attached to any pump without extra fittings, special platform or foundation.

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Southern Pacific

Spalding-Robbins Disc Plows

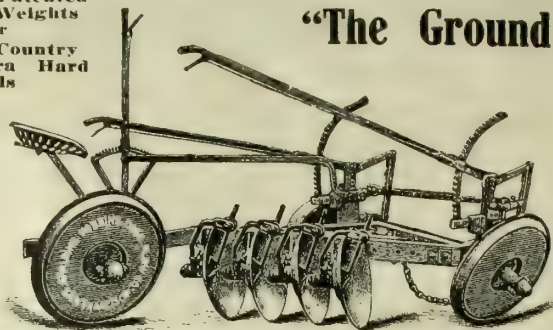
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GOLD MEDAL

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Rough Country
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Convertible to 1-Furrow Extra

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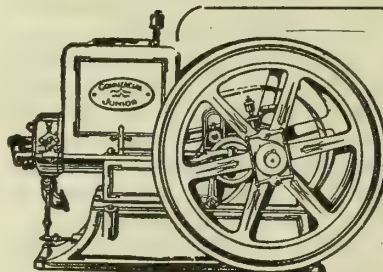
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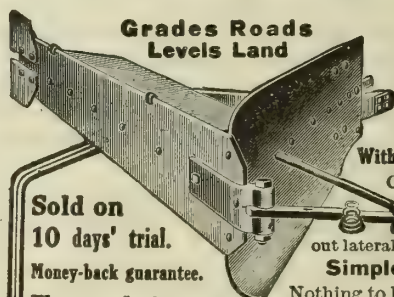
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Thousands in use.

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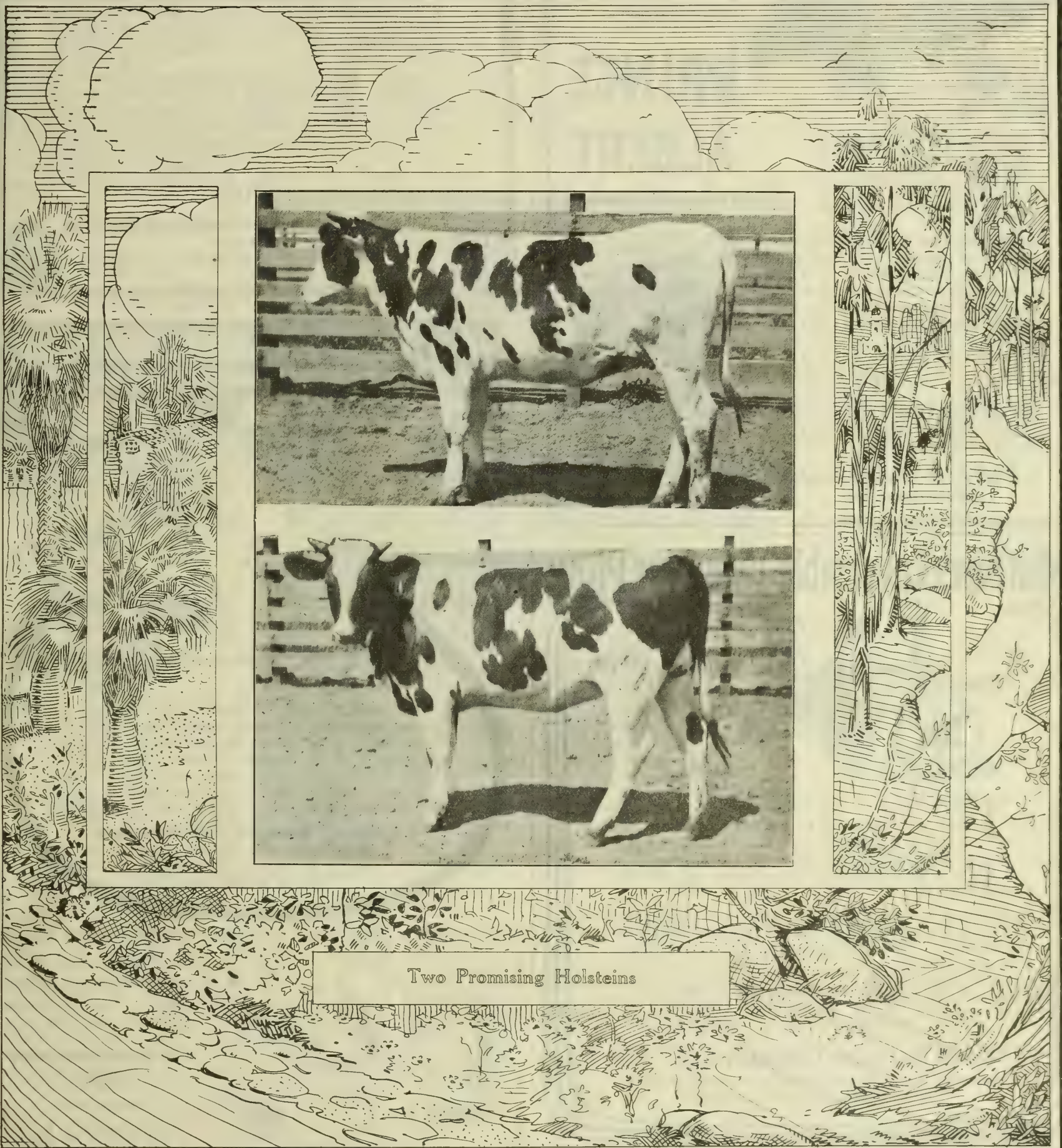
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

September 23, 1915

SAN FRANCISCO



Two Promising Holsteins

Prince Albert just does this little old thing:—



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R. J. Reynolds
Tobacco Co.

Constantly, men who have earned their spurs as smokers are being chosen members of the Prince Albert "Old Time Jimmy Pipers Club." Here is J. H. Hill, of 208 W. 82nd Street, New York City, who has known the daily joys of a jimmy pipe since he was 17 years old. Mr. Hill is enjoying his sixty-seventh summer.

It certainly is the brand that's *all there*, no matter *how* you smoke it, *when* you smoke it, or *where* you smoke it! Just puts sunshine into your spirits the whole day long. Can't hardly wait, sometimes, till you can fill up that friendly old pipe or roll a cigarette!

Just you *find out for yourself* that Prince Albert excels, in flavor, coolness and all-around smoke-joy the most cheerful thought either we, or its most enthusiastic friends, could express.

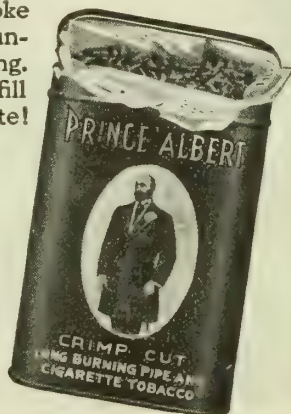
Buy Prince Albert everywhere in toppy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors—and that classy pound crystal-glass humidor with sponge-moistener top that keeps the tobacco in such fine condition.

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Winston-Salem, N. C.

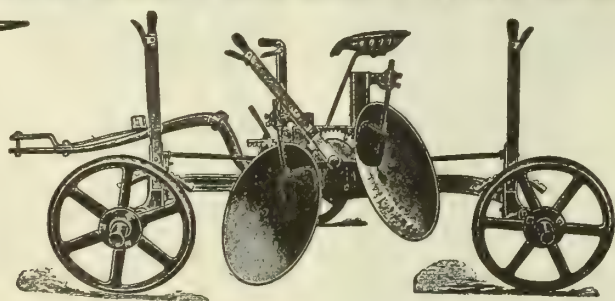
puts a jimmy pipe or makin's cigarette into your mouth with a brand-new idea of how joy'usly good tobacco smoke can be! Fire-away any hour of the night or day with P.A., it's so good, so cool, so full of kindly flavor and fragrance. The patented process takes care of that—and *cuts out* bite and parch. Quick as you can, you get some

PRINCE ALBERT

the national joy smoke



Mathews Reversible Twin Disc Plow

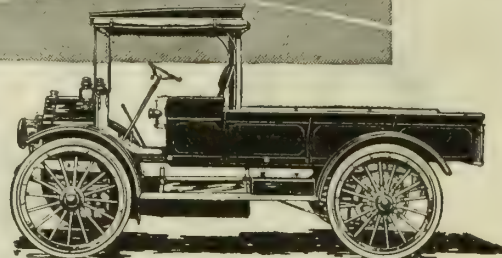


THIS is the only reversible disc plow which does not use segments to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—and stick to the work on hillsides.

It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost you no more.

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International Motor Trucks

THERE is one advantage in using an **International Motor Truck** that fruit growers and truck farmers are likely to lose sight of. The truck, traveling faster than horses, brings about one important economy.

Twenty to forty miles of daily travel, with the necessary stops, keep the horses and driver busy all day.

With an **International Motor Truck** the driver can start later in the morning and pass every horse-drawn rig on the road. He'll be back early and can put in the best part of the afternoon at productive work on the farm. That gain is enough to make a motor truck pay.

The driver's time on the road is an expense, his time on the farm a profit. An **International Motor Truck** saves you this expense and gives you this profit.

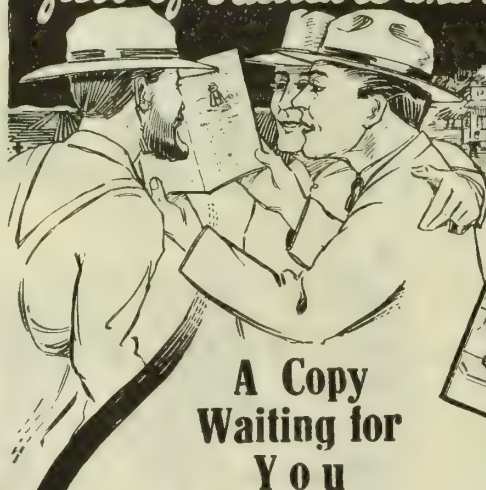
This is only one of many reasons why every fruit grower or truck farmer should use an **International Motor Truck**. Drop us a line and we'll send you more reasons and full information. One of our three trucks—a Model "M," for 1,000-lb. loads, a Model "E," for 1,500-lb. loads, or a Model "F," for 2,000-lb. loads—will fit into the conditions of your work. A post card to us may save you many dollars of expense. Send it today.

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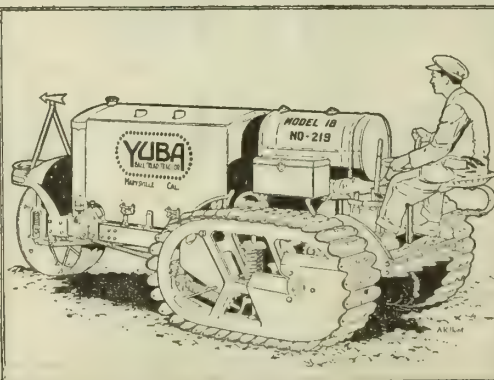
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 13

LOS ANGELES: THURSDAY, SEPTEMBER 23, 1915

One Dollar Yearly

The Outlook for the Olive

An Address by B. B. Meek at Fruit Growers' Convention, Palo Alto

BRIEF consideration of the olive industry in California, past and present, will assist in the intelligent consideration of its future. It is interesting to note that it was during the stirring days immediately preceding the American Revolution that the olive, the historical emblem of peace, was first introduced into California by the early Spanish fathers. Many of the olive trees planted by them in their mission gardens are still alive and producing bountiful crops. From these trees was propagated the most popular variety of pickling olive we have today, that known as the "Mission." Surely to these gentlemen we owe a deep debt of gratitude.

But it was not until about a generation ago that there occurred an awakening as to the commercial possibilities of olive culture, and then, in many parts of the state, stimulated by nurserymen and promoters, a large acreage was planted. Little or no care was taken in the selection of varieties, with the result that when these orchards reached a bearing age many of them were found to contain almost all known varieties of olives, pickling varieties, oil varieties and varieties good for neither purpose.

Again, soil and climatic conditions were not given due consideration. Many groves were planted in the coast regions where the moist atmosphere encouraged scale and where the yield was found to be irregular. But oil was made and green olives pickled and the commercial history of olive culture in California began. However, it is doubtful if the oil and the green pickled olive could ever have placed the olive industry on the horticultural map of California. It remained for the pickled ripe olive to revolutionize the industry and to give to California a climatic corner on a new and delicious form of a food famed for centuries in the Old World for its nourishing and healing value.

Long years of tedious experimenting for a pickling process that would retain in the ripe olive its rich, oily flavor, preserve it indefinitely for Eastern shipment and not destroy its beautiful, deep purple color, were followed by long, trying years of discouraging and costly attempts to educate the people to its exceptional food value and to introduce the delicious product to the markets through the country; but so well done was the work of these pioneers in the building of this industry, and so meritorious their cause, that today the gospel of the California ripe olive is being spread by enthusiastic food experts, by physicians and by magazine writers throughout the entire civilized world.

And thus, while the introduction of the ripe olive began only a few years ago, the expansion of the market has

been phenomenal. The early promiscuous planting served the purpose of disclosing the best commercial varieties and of determining the ideal soil and climatic conditions.

More recently a great improvement has been made in cultural methods. It is now an established fact that the olive tree responds well and continuously to good cultivation, to regular irrigation, to consistent pruning, and to the application of suitable fertilizers in adequate quantities and in proper season; and that if it be cultivated negligently or not at all it will not bear remunerative crops. It is known that the olive in a state of nature is not exacting in respect to soil; it establishes itself on the sides of mountains, among clefts of rocks and amid loose stones scarcely less

In the coast regions of California subject to the fog and cool sea breezes the tree is generally diseased, the yield irregular and the fruit of poor quality. A dry, warm atmosphere is absolutely essential.

It is unwise to plant olive trees in any region where the temperature often falls below 20 degrees. The olive tree has survived a temperature of 10 degrees in California, but the fruit may be injured by a fall in temperature to 28 degrees. This tends to render unprofitable the growing of the olive in localities where the ripening season extends into the later winter months. Thus the climate restricts the district available for olive culture.

In soil, climate and varieties the experimental stage has been passed

olives than when they were younger. And in Europe and Asia the trees are still producing at the remarkable age of several hundred years.

Besides its wonderful longevity, the olive is remarkably free from pests, in fact, entirely so in portions of the Sacramento valley. With consistent care it is a regular and prolific bearer. Another important feature is that the entire crop can be utilized. Fruit too small for pickles and frozen or otherwise damaged fruit can be used for oil and other by-products. As a delightfully healthful, nourishing food the ripe olive cannot be surpassed, and the number of uses to which it can be successfully put is constantly increasing, as a substitute for the indigestible mushroom for instance.

The development of the market has hardly been begun. To illustrate this: If New York City ate as many olives per capita as the little town of Oroville does, California with its present acreage could not supply this large center long.

And lastly, but of prime importance, an olive grove is a sure, consistent, everlasting revenue producer, and is indeed, as the old Spanish proverb has it, "A gold mine on top of the ground."

However, if the olive industry in California is to gain the important place it logically deserves: First, the state must do for the olive what it has done for other fruits, establish an experimental station and experiment in pruning, fertilization, cross-pollination, etc., and for larger sized and earlier ripening fruit. Second, oil must be considered as a by-product only. Third, the growers must give their orchards better and more consistent care, thereby increasing the proportion of good quality pickling fruit; and the prospective growers must plant proven varieties, in proven districts, according to proven methods. Fourth, the market now so undeveloped must be enlarged to keep pace with the increase of production by standardizing the pack, by a co-operative and consistent campaign of advertising, and by a systematic campaign of education as to the diversified uses of the olive and its by-products. Fifth, for the past three years perhaps we have been trying to strangle the goose that lays the golden eggs by cramming tasteless green olives down its throat. This year's carry-over stock is largely the result of this short-sighted and unfortunate policy, and therefore above all the growers and packers must combine to the end that ripe olives and ripe olives only are pickled and the pickling of green olives sold under a ripe olive label forever stopped.

Upon the ripe olive, how it is grown, how cured, and how marketed depends the future of the olive industry in California; and the olive industry can become one of the biggest and most important fruit industries in the state.



well than in the richest and best watered of garden soils. But when it comes to the cultivation of the olive for profit, conditions of climate, soil, irrigation, tillage and fertilization have to be carefully studied.

It has been demonstrated that the olive will thrive best in a light, friable, well aerated, warm, and well, but not necessarily deeply, drained soil, rich in lime and potash content, and that it will yield scanty crops of fruit of poor quality in heavy, clayey or ill-drained soils. The olive requires less water than many other trees on account of its sparse foliage and strong root system. It will not, however, produce heavy yields in a soil lacking in moisture. Excepting in rare cases monthly irrigation during the dry season is necessary for big fruit and regular yield. This must not, however, be excessive, and the water level must be kept low, otherwise the quality of the crop will be inferior, the yield irregular and the tree subject to disease. In many rich, loamy soils, a good tree growth can be obtained without irrigation, but inequalities and intermittency of yield, to which the olive is subject under certain conditions, make the growing of the product unprofitable in these localities.

and the olive industry occupies a peculiarly secure position.

There are approximately 25,000 acres of olives, bearing and non-bearing, in California. This is only a small fraction of our acreage in peaches, prunes, apricots, apples or oranges, and these products are grown in other states and in other countries throughout the world, while California produces practically the entire world crop of pickled ripe olives; and on account of the combination of climatic and soil conditions, the future production of the pickled ripe olive commercially, will practically be confined to California.

There are thousands of acres of land in the foothill sections of Northern and Central California where climatic and soil conditions are ideal for olive culture that would not grow any other product profitably.

And olive growing is especially attractive for many reasons. The olive is the only fruit bearing tree whose producing qualities do not deteriorate with age. In fact, they appear to increase as far as we have any record. Many olive trees in California which are known to have been planted more than 100 years ago are today producing a larger quantity of better

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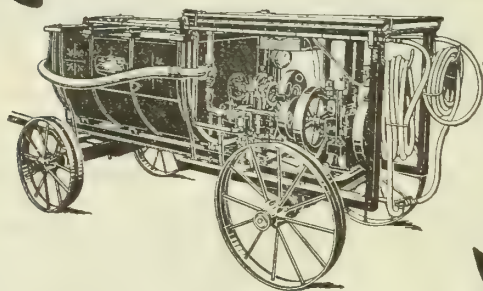
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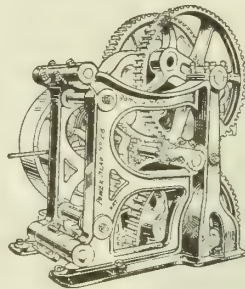
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DEVELOPMENTS IN THE STUDY OF THE DATE PALM

Written for California Cultivator
By Paul Popenoe, Author of
"Date Growing"



ALTHOUGH Arabs have been cultivating the date palm since the dawn of history, they have made no progress in the last 4000 years. Records which have come to us from the time of King Hammurabi at Babylon in the twentieth century before Christ show that the cultivators of his day were able to secure better results than are their descendants in the same region at the present day.

During the last twenty years, however, Americans have taken up the cultivation and study of the date palm and are rapidly developing it along the lines indicated by modern botany and agriculture. A method for rapid propagation of offshoots and methods of artificially ripening the dates are perhaps the two most notable contributions so far; but a third of much importance is foreshadowed in the attempt of Professor Silas C. Mason of the United States department of agriculture to rationalize and tabulate the means for identifying the various varieties of palms.

The experienced grower can distinguish his palms, just as the experienced rancher in other fields can distinguish his varieties of apples or oranges, by the appearance of the tree. He depends on many small indications which he almost never takes the trouble to describe accurately to himself. But if these indications exist they must be capable of description, and Professor Mason, with tape measure and protractor, has undertaken to do this for the palms of the Southwest, publishing the first results of his study in bulletin No. 223 of the United States department of agriculture.

The date palm is very formal, even geometrical, in most of the details of arrangement of its parts. Professor Mason has been able to take advantage of this fact in describing the characters of value in identifying varieties. Most of these characters are found in the leaf, and the professor thinks that when standards have been established a series of measurements on two or three leaves of any palm will suffice to determine its variety. "It is not to be supposed that date leaves are so perfectly laid out along geometric lines that we have but to read a set of angles, refer to a table, and say 'This is Thoory' and 'this is Hayany,'" he warns us. "But it is true that certain ranges of angles are found only in certain varieties, and along with other characters are important factors in identification."

He therefore presents the results of his study of what he considers the four most important varieties in the Southwest at present; namely, Deglet Nur, Thuri, Hayani and Manakhir. No doubt the formulae for other varieties will be worked out and published in due time.

It must be said that the procedure is very complicated and is not likely to be followed in any case by the average rancher, particularly as it involves the use of a large number of technical

words which to most people carry no meaning. But for the serious student of date growing it offers much promise.

In the second place Professor Mason thinks that this system will be of value in the study of seedling palms, some hundreds of thousands of which now exist in California and Arizona. "It seems to be a good working hypothesis," he writes, "that there is a close correlation between the leaf and fruit characters of the date tree." If this is the case, and we know the leaf characters for a given variety—Deglet Nur, let us say—then all we need to do is to measure a bunch of Deglet Nur seedlings, and by picking out those whose leaf measurements most nearly approach that of the parents, we will be able to point them out as the ones which are most likely to produce fruit that nearly resembles the typical Deglet Nur.

This obviously will permit one to form some estimate of the value of a seedling before it comes into fruit—provided the method proves, in practice, to be reliable. It is at present a hypothesis without much foundation in actual experience.

Still a third important use of the method of measurement is suggested by Professor Mason. If the characters of the leaf give some clue to the characters of the fruit, then when we want to produce seedlings we should look for a male tree which measures the most nearly to the standard of the tree which we intend to use as a female parent. Cross-pollination from such a male ought to give seedlings



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with less variation than would the use of a male picked at random.

This again is an untested hypothesis which needs much confirmation. Although it is of great interest, it is doubtful to me whether production of dates from seed will ever be an important branch of the industry, under any conditions.

The principal defect in Professor Mason's very suggestive bulletin is the total inadequacy of the statistical methods he has employed. The problem of establishing standards for the various varieties is in effect the problem of studying the variation of certain characters in the palm. Now the study of variation is a branch of the science of genetics (heredity) which has been worked out with great elaboration and precision during the last quarter of a century. It now offers methods of extreme refinement. Professor Mason not only ignores these methods, but in many cases follows methods that even genetist must consider almost worthless. His averages appear to be based on very small numbers, eight being the largest number he mentions. Averages of this sort are of little value, particularly as he fails in every case to give the series on which he based his average, or to work out any of the well known mathematical tests to their correctness. Without such data we have really no means, except our confidence in Professor Mason, for judging whether the results he reaches are of any value or not. It is to be hoped that in some future publication the professor will lay before us the data on which his conclusions are based.

Furthermore, although he speaks several times of correlations, or "a strong correlation," he nowhere publishes a single correlation and does not even give any indication that he has worked out a single one of these correlations. Here is a defect that can easily be remedied but, until it is remedied, exists as a serious blot on the statistical side of his work.

Again, some of the characters which he measures seem to be of doubtful value for his purpose. Thus in taking from his table the thickness of the leaflets of five different kinds of palm, we find that four of them offer so little difference in measurement that it would be impossible to use that character with any certainty as a clue to identity.

Finally the bulletin is marked by a great many mistakes in the spelling and use of Arabic words. These do not impair the value of the main work, but they are confusing and appear to me unnecessary. I will point out only two cases of this, which are words that he apparently wishes to introduce into the date vocabulary of the American growers—"sobata" and "shamrukh." He appears to have been misinformed as to the meaning of both these words, and consequently uses them wrongly in his diagram. The proper spellings for them are "subatah" and "shumrukh." The former is particularly objectionable, as it is not even good Arabic, but found only in the vulgar and corrupt dialect of Egypt. I do not think American growers want to assimilate many Arabic words of this sort; but if they do, more care should be taken than has been done in the past that the words offered are properly spelled and, most of all, properly understood and applied.

Despite these flaws the bulletin must be considered to mark a step of great importance in the study of the date palm. Date growing is making large strides from the commercial point of view in the Southwest and is certain to make immensely larger

ones during the next decade. It is gratifying to us to think that the scientific aspect is going to keep pace with the commercial aspect and that from now on the Old World will have to look to the New for its knowledge of the finer points of this ancient industry.

NEW TABLES FOR FUMIGATION

Waste and inefficiency in fumigating fruit trees are going to be lessened by a new publication of the University of California.

What doses to use in fumigating fruit trees is set forth in this bulletin, entitled "New Dosage Tables." Written by C. W. Woodworth, professor of entomology in the University of California, it has just been issued by the university and may be obtained free by addressing College of Agriculture, Berkeley.

The tables commonly in use heretofore are now shown to be grossly inaccurate. Trees higher or lower than the ordinary orchard tree have been getting much weaker doses in fumigation than they ought to have had. The new tables help the fruit grower to set the matter right.

That the most important improve-

ment needed in fumigation practice is the general adoption of correct allowance for tent leakage is declared by Professor Woodworth. These tables help to solve that difficulty.

The tables in use in the past were practically sound for medium conditions, but with orchards where trees are either unusually large or unusually small, the new tables will help toward a great increase in efficiency and economy in fumigating.

CALIFORNIA RIPE OLIVE ASSOCIATION

Scores of olive growers representing the groves in the vicinity of Lindsay, Exeter, Porterville and Strathmore, one of the largest olive centers in the state, gathered at Lindsay during the past week for the purpose of joining the new California Ripe Olive Association and discussing ways and means of promoting on a more substantial and profitable basis the ripe olive industry. Considerable enthusiasm marked the progress of the meeting, as the olive growers in this section of the state as well as others are fully cognizant of the fact that effective organized efforts are necessary for many reasons, the principal

one being that the growers are finding it more difficult every season to successfully market their crops, despite the fact that they offer to the world one of the most healthful and delightful of California's products, a product which is superior to that of Spain, Italy or Algiers.

R. C. Merryman, a prominent grower of Tulare Co., presided over the convention. Carl T. Worst of San Francisco addressed the growers, taking as his theme the marketing and selling of the product. He said: "While the consumer is paying a uniformly high price for the ripe olive as a luxury the grower is hard pressed at times to get even his cost of production out of his crop. The remedy lies in making the ripe olive known to the Eastern housewife as an article possessing high potential food values, getting her to demand it as a food and at food prices, then let the grocer, wholesaler, broker and packer make a food profit out of their work so that the grower can get a real profit by reason of a standardized price."

Other speakers were G. V. Reed, W. B. Kigans and R. L. Underhill, secretary of the association. Similar meetings will be held in other districts in the near future.

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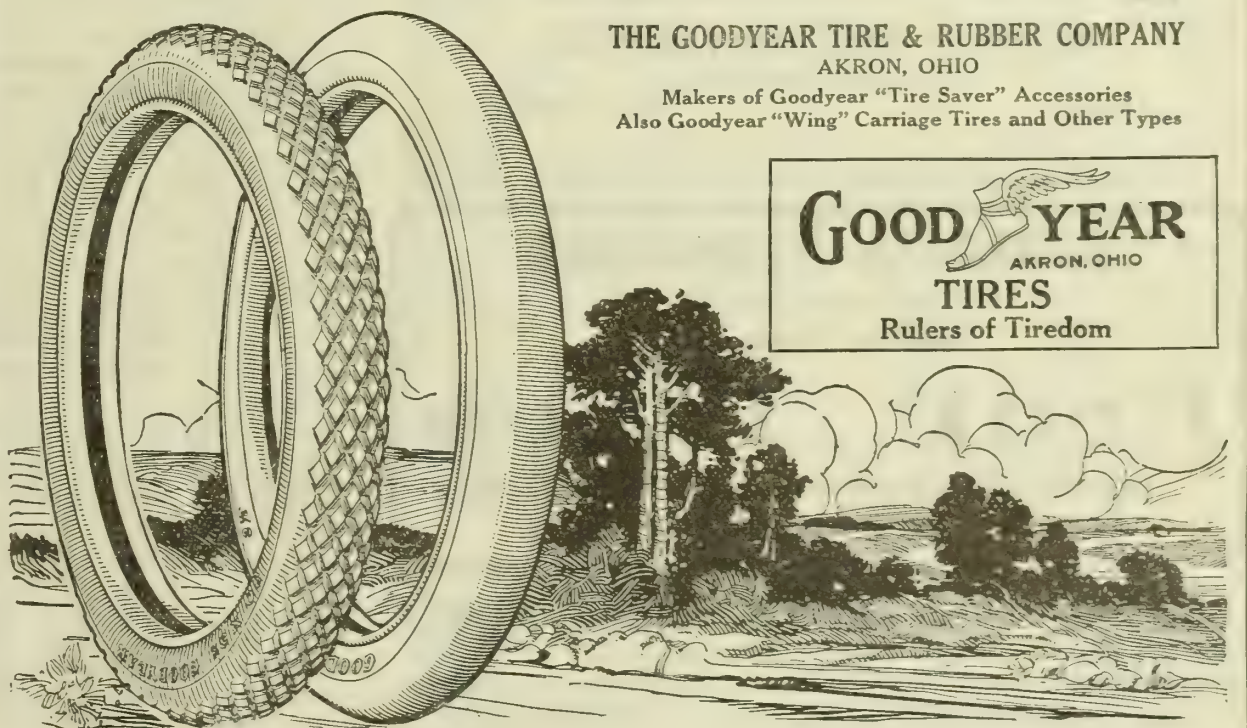
Now we add 20 per cent to the air capacity. We add 30 per cent to the side-wall strength. So this year, despite lower prices, you are getting tires that are much better.

Compare these new Goodyears with other small-size tires—even with last year's Goodyears. See for yourself the extra mileage they give you. It is bound to excel, on the average, any previous records on tires of like rated size.

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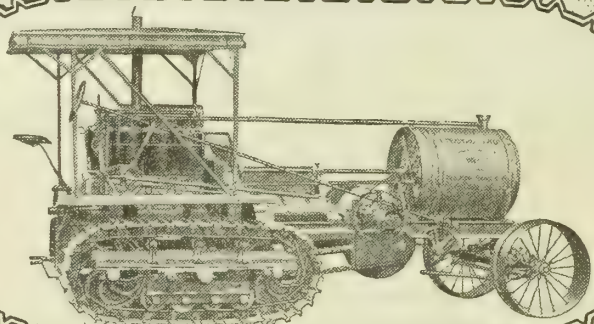
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Cheaper Money Not the Only Aim of Rural Credits

An Address by Myron T. Herrick at the Panam - Pacific International Exposition



HE rural credits movement has two features: One is real estate mortgaging; the other, cooperative banking. The first depends largely upon money obtained in the open market; the second, upon the farmers' own money. In the United States farm mortgaging is unsatisfactory to both investor and borrower, while the farmers have never utilized their own credit collectively for any purpose.

The movement's aim is not centered on the reduction of interest rates; it rises higher than that and proposes to enable homeseekers to accomplish their wish, landowners to procure adequate funds to develop their holdings, and farmers to mobilize their resources so that American agriculture, become modernized and properly financed, may keep pace with the progress in every other industry, bring better prices to both producer and consumer, and perpetuate prosperity in this nation: Those who have overlooked all this, and talk only of lower interest rates, have belittled the grand purpose of the movement.

During the five years that this movement has been in course, the entire country has been thoroughly aroused to the importance of it. Those of us who have been with it from the start have the proud satisfaction of knowing that it has been indorsed by two presidents and is supported by the great majority of the people. We are confident that it will continue to be a living issue until all its problems are settled. Some results, good, bad, and indifferent, have already been achieved. The mortgage business has benefited by the attention attracted to it, and money is flowing in an ever increasing volume to the farm, while legislation has been enacted in seven states on the cooperative so-called unions, and in ten states on land-credit institutions. This legislation, however, has little merit.

Unfortunately the movement has been rived by a serious cleavage, and on one side stand those who insist upon state aid, and on the opposite stand those who believe in private initiative and cooperation. The demand for state aid in farm mortgaging is very strong.

California has adopted a resolution to let the people vote on amending the constitution so as to permit the state to use its cash and credit for farmers.

Indiana, New York, Wisconsin and Utah have involved the credit of the state in farm-land credit by laws which require the state comptroller or auditor to serve as trustee for the bondholders of mortgage associations. New York has throttled competition by making this the exclusive right of one highly privileged and monopolistic institution.

Kansas has authorized the deposit of farm mortgages with the state treasurer and the issue against them of bonds whose value shall be certified by the state.

Louisiana has authorized the exemption from taxation of land improved for homesteads by or for immigrants.

Missouri enacted a law for creating a public land-credit bank. Doubts as to the constitutionality of the law prevent this bank from being formed.

The tendency in the last Congress

towards state aid was exceedingly pronounced. Practically all the measures introduced provided for it to a greater or less extent, while those that received the most attention proposed its use for farmers generally to a degree that appears in Europe only for the lowest class of peasants. About one-half billion of dollars was demanded for cotton growers, while cheap money without limit through government intervention was demanded for farm mortgaging. After the senate passed the McCumber bill and the house the Bulkley bill for this purpose, congress created a joint committee on rural credits to present a new bill by January 1, 1916, and there the matter rests.

The advocates of state aid cite as their arguments this use of state aid in some European countries, the critical situation arising from the great war, and the indifferent or alleged antagonistic attitude of financiers towards farmers. On the other hand, the friends of private initiative and cooperation assert that conditions in Europe and the United States are dissimilar and that there is no emergency here calling for the use of government cash or credit. They cite as their arguments the official declarations of President Wilson, Secretary Houston, the United States and American commissions, and other experts against state aid, and they contend that if proper legislation were enacted and rural cooperative organization perfected, the credit of land owners and the resources of farmers would be so vitalized that abundant capital would be available on easy terms for the cultivation of the soil and the continual advancement of agriculture.

The strongest argument for state aid is the claim that there is a pressing, immediate necessity for it. If that claim is wrong, or if any necessity that exists should disappear, then the demands for state aid ought to cease with it. State aid—after saying the most that can be said for it—is merely an expedient to meet an exigency, the existence of which is as stoutly denied by some people as it is asserted by others. Furthermore, it is advocated without fully considering its effect on the taxpayers not intended to be directly benefited, and without a thought of testing and letting the ordinary means of farm finance have a chance to show their worth.

The arguments for state aid are based on premises, the correctness of which can be logically proved, of course, only by future trial. In my opinion there is not an advocate of it but believes in his heart that the injustices he condemns and the troubles he mentions would be remedied, if private enterprise could be efficiently regulated and rural cooperation intelligently practiced. So in studying the question, we must consider the possibility of making these latter methods effective. They are more effective in Europe than the much heralded state aid and are more generally used than it. They rest upon individual honesty and capability. No one in this hall will maintain the superiority of European over American people in these two qualities. Indeed, we all think that the comparison runs in our favor; so if we should say, in spite of the wonderful agricultural organizations developed through private enterprise and cooperation in Europe, that such development is impossible here, the assertion is tantamount to an admission of inferiority, or an absurdly illogical deduction that American financiers and farmers cannot do what lesser peoples in Europe have accomplished to a remarkable degree of success.

Both factions in the movement agree that in land credit the greatest need, next to an adequate flow of capital, is the repayment of loans at fair interest rates and by small installments running through a long series of years; that is, that farmers should

have the right to borrow on mortgage, not through three and five-year promissory notes (as at present), but through thirty, fifty or seventy-five year annuity contracts so that they shall not be required to pay off their debt any faster than they can recover it from the yearly savings from the soil. The long-term loan reducible by periodical payments, or annuities, is the only safe way to finance the purchase or improvement of land, yet it has never been tried in the United States for farmers, although there is no railroad that bought a right of way, no city that acquired a park, no private enterprise that erected a great plant that did not obtain by prior stipulation this method for the retirement of its obligations. True, in most of such cases the repayments go into a sinking fund that is maintained intact for a certain time; but this does not alter the fact that the refunding comes from annual earnings. The principle remains the same, and the only difference that arises in its application to land-credit institutions, properly managed, is that the sinking fund (created by the yearly dues of borrowers) must ordinarily be distributed among bondholders, likewise annually, so as to prevent the accumulation or misuse of idle funds.

The mortgages on American farms now approximate two billions of dollars, and run from three to five years. All will not be repaid within that time; many will be foreclosed, many others will be renewed and the greater bulk will remain on record with the burden increased by fees, commissions, and various charges. If long-term facilities were available, this stupendous debt could be converted into annuity contracts and finally extinguished by yearly instalments so small that they would not exceed the present interest rate; foreclosure would be less frequent; farm mortgaging would lose its most formidable aspects to the borrower; and many a tenant and homeseeker could become a land owner by the easy process of setting aside a portion of his annual returns for paying off the indebtedness contracted in acquiring or improving his home.

But present land-credit facilities are inadequate not only for long-term lending, but also for farm mortgaging generally. The trouble lies mainly in defective laws. In some states the proving and establishing of titles to real estate are difficult; in others, foreclosure is slow and costly. A mortgage loan at best is a tedious investment, and throughout the United States it usually requires the services of a lawyer in obtaining and often a resort to the courts in recovering it. The state laws are dissimilar, and only experts are able to advise investors of their rights. All this involves risks, delays, and expense which increase interest and other charges far in excess of the normal rate for loans made in regions not in close touch with financial centers.

The farm mortgage will never be an effective instrument for leveling interest rates and starting an easy flow of money to all parts of the country until it becomes a standardized, marketable security. This requires that the rights under the mortgage shall be certain and sure and the same in California as in Maine, and so on for all states. Consequently it is highly important that the state laws be made uniform as well as effective for securing and recovering claims. The need of this uniformity and certainty should be kept in view whether farm mortgaging in the future shall be state aided or left to private enterprise. A government institution would not be in any better position than a private company unless it have cheap, easy, and certain means for making, securing and recovering its investments.

So the first step in the reorganization of land credit naturally would be a revision (wherever necessary) of state laws relating to mortgaging. Some states already have excellent laws that need no changes. In a number of western and southern states, however, the laws are objectionable, while everywhere legal obstacles are presented to long term lending. I will try to explain this abstruse problem. A long term loan is represented, not by a promissory note, but by an annuity contract—an agreement of the borrower to pay equal sums annually during a stipulated period. Such a contract may, of course, be easily entered into, but

what may be done with tenders of partial payments on it? Clearly they cannot be applied in the ordinary way for reducing the size of the loan, as with a promissory note, because (in theory at least) the transaction has ceased to be a loan and has become an obligation to pay an annuity. The lender has bought the contract and taken a mortgage to secure it; the sum lent is, in fact, the price paid for that contract, while the yearly dues of the borrower are the income that he agrees to give to the lender for that consideration.


Now, suppose that the borrower, wishing to clear off part of this obligation against himself and his mortgaged property, tenders some money for that purpose, what may be done with that money? Two things only; it may be applied to reduce the amount of his annual instalment, or else to increase its size and shorten the period of his contract. In some European countries, however, a borrower may also have the money applied for extending the period beyond the original term, with the annual instalment left unaltered; or, after the contract has run without default for a certain number of years, he may even obtain a readjustment that would change it in both amount and period. But, in spite of any of these alterations in the original contract, the mortgage would remain as a valid lien on the property against the rights of third parties.

In the United States, however, an alteration of the original contract through applying prepayments in any of the ways I have indicated might seriously affect the lien of the lender under the old mortgage, if in the meanwhile rights of third parties had been attached to the mortgaged property. Under existing laws, the lien certainly could not be extended beyond its original terms against intervening third parties. Moreover, some lawyers go so far as to contend that, inasmuch as the borrower's agreement to pay a series of annuities constitutes one single contract, any material alteration in that contract, either as to amount or period, would convert it into an entirely new contract and invalidate the old mortgage. If this be true, then the lender would have to take a new mortgage at every alteration of the original contract, while he would have to refuse tenders of prepayment altogether, if third parties had acquired any rights.

If a new mortgage had to be taken, this would necessitate re-examination of title and various other acts, involving more or less expense, at every part prepayment. This expense would have to be borne by either the lender or borrower. Prepayments would become troublesome; a rearrangement in the event of a default would also make extensions or renewals equally troublesome. So, if these objections of the lawyers be tenable, the borrower could not be accorded the option of making prepayments, while the lender could not safely show any leniency for defaults; the contract of the long term borrower (when once entered into) would be unescapable and unalterable, all payment in advance would be impracticable, and the lender would be under the necessity of foreclosing upon the non-payment of just one annuity. Besides these difficulties which militate against renewals and the acceptance of partial payments, there are others arising from the absence of statutory provisions relating to taxation and registration that interfere with the proper execution and releasing of long term mortgages. All this makes long term lending a somewhat complicated problem under the laws at present.

I have tried to mention only enough to show that the troubles with land credit in the United States are deep-rooted; they lie in the bedrock. The creation of land credit institutions before removing these troubles would not alone suffice. A reorganization (to be thorough) must undertake as its first step the revision of state laws wherever necessary. Unless this be done, the reform would be deceptive, and no institution, whether formed with a federal or a state charter, would be able to operate in an entirely efficient manner. A superstructure erected upon the present faulty base would be fragile and unreliable, no matter how elaborately it should be built by either state aid or private enterprise.

(Continued Next Week.)



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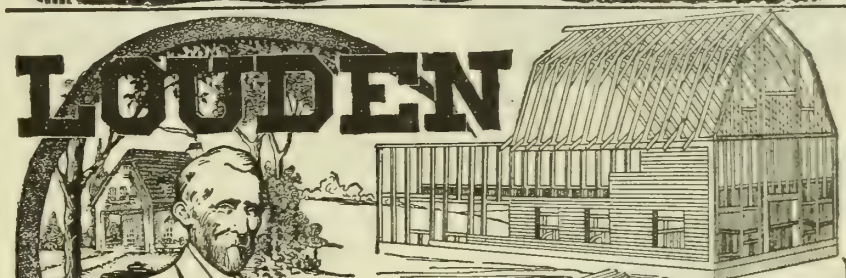
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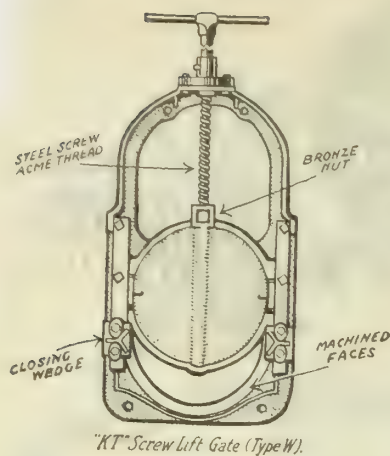
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Written for the California Cultivator
By Ernest Brauntton



HERE is no question but we are coming to it—the true California garden—one that needs no water, food, pruning, or other care throughout our long dry summers. Not only have I long predicted but advocated and longed for it. Incidentally I have built several of it (for other people).

In no country are there more native plants than would lend themselves to such a scheme. Trees, shrubs, herbs, vines, even showy water plants that would grow in a stagnant pool throughout the season, are not wanting in considerable numbers, in all parts of the state. It is not alone possible and advisable but most commendable to build such gardens. We should have them on every hand for, considering amount expended in upkeep they will surpass in attractiveness any gardens we may build.

The Resourceful Gaillardia

While one is looking about for plants that will bloom throughout summer without being watered do not overlook gaillardias. They do not come in a great range of colors and are somewhat coarse in both flower and foliage but they will bloom from spring to fall without irrigation and the blooms will be fairly satisfactory in both size and number. If in a border plant arctotis back of them and gazanias for an edging or low border in front. Both these are dependent on sunshine to open.

Mealy Bugs a Pest

In my garden at present the mealy bug pest is a serious one, being quite bad on crinums, clematis and the Chinese rice paper plant (Fatsia, or Aralia). This is not the citrus mealy bug for there are citrus trees in all parts of the garden yet none are infested. I have had some success in treating the infested parts with air-slaked lime, covering the nests and congregations freely but there should be a speedier and deadlier treatment meted out, and I presume Essig's spray would prove effective. Mix water, ten gallons; whale-oil soap, ten pounds; crude carbolic acid, one gallon. Bring the water to the boiling point in an iron kettle, dissolve the soap in it, then add the crude carbolic acid and heat to the boiling point for fifteen minutes. This will give you a thick stock. Dilute any quantity of this with twenty times as much water and spray any time from now to March. Two or three sprayings may be necessary to destroy all the insects.

Cut Shasta Daisies

Shasta daisies now have stopped blooming and the old flower stems should be cut away down close to the plant. Cut each stem by itself; do not try to do the job on a wholesale plan. It is likewise a good time to divide or replant these daisies. Tops of perennial phlox should also be removed now and this will be found true of much in the garden at present. I am taking up gladiolus bulbs and I notice that new shoots on callas are pushing up, wherefore I am cutting away all the old leaves. I find all over the gar-

den that nature is suggesting a clean-up of old tops of many plants.

For Native Flowers

It is not too early to prepare beds for that wild-flower garden. Spade it up good and deep, using some well-rotted stable manure to keep it loose. Water well and start the weeds. Hoe these down and repeat treatment. When all the weeds have started and have been destroyed it will not only be safe to sow native flower seeds with assurance of success but the best time will have arrived. Start at once.

Shape Trees and Shrubs

Many trees and shrubs are so heavy with an abundant, summer-made top that when hanging heavy with the weight of winter's rains they will sure split unless lightened by pruning. The present is a good time to do this necessary pruning for wounds will start to heal over before cold weather comes on. Many trees in both garden and street parking will have their fine appearance and balance preserved if this matter is now attended to or will be partially or wholly ruined if neglected until rain and wind have expended their force upon them.

Yellow Callas

During the past few years the yellow calla, known as Richardia Elliottiana, has steadily gained in popularity until it has become a standard in trade circles. In light soil more especially does it thrive, blooming abundantly, and increase by offsets. In heavy soils the bulbs perish during the rainy season and in light soils they deteriorate to such an extent that the following season's blooms are not fine, so it is best to remove bulbs each year and this is an easy matter for, unlike the common calla, the yellow one is not evergreen.

WATERING THE LAWN

This is a matter which can be most effectively and economically done by considering the water requirements of the grass most commonly used in the formation of lawns, Kentucky bluegrass. This grass is neither an aquatic nor a desert plant, but may be classed with those plants having medium water requirements. While it is necessary to keep the soil moderately moist during the growing season, it is undesirable to keep the water constantly running on the lawn, as many persons are inclined to do when not restricted in its use.

Too frequent and too prolonged watering tend to make the soil soggy and cause the grass roots to grow close to the surface in order to get air. The same effect may also be produced by frequently sprinkling the lawn, which merely moistens the surface layer of soil, and thus encourages shallow rooting. Such shallow rooted lawns have little or no resistance to drouth, if it comes, and require the most effort and largest amount of water to maintain them. One or two thorough waterings of the lawn each week, so that the soil is well moistened to a considerable depth is the preferable method to employ, and at the same time conserve time and water.—B. O. Longyear, Colorado Agricultural College.

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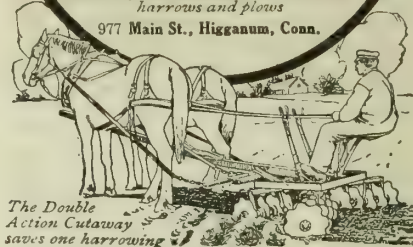
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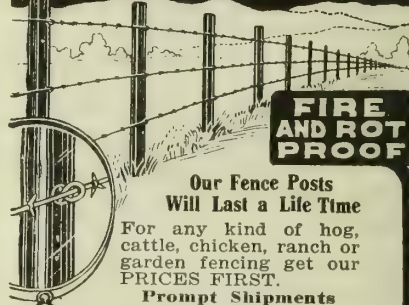
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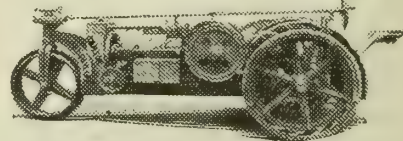
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FARMERS' MONTH

The month of October has been designated as Farmers' Month at the Exposition. It is packed full of events which should draw farmers from all parts of the world. Especially does the month hold attractions which will be of interest to live stock breeders. Horses and cattle of high degree will be on exhibition. There will be the shows of horses, mules, jacks and jennets from September 30 to October 13, and of beef and dairy cattle from October 18 to November 1. In these, picked pure bred animals of all the recognized breeding classes will be on exhibition and will compete for cash prizes and trophies presented by the exposition, by a large number of breed record associations, and by various state commissions to the exposition. In all, nearly \$125,000 has been appropriated for the horse show and approximately an equal amount for the cattle show.

Such purses as these will certainly bring as fine as the earth possesses.

Of course during all periods of the exposition there have been exhibitions of agricultural implements. A day or many days may well be spent in the Palace of Agriculture and the Palace of Machinery in the study of the most improved of farm implements, of water-lifting appliances and, in fact, everything of interest to the farmer who would apply scientific cultural methods.

During October there will be a series of conventions of special interest to farmers. Among them will be those of the California Draft Horse Breeders' Association, the American Association of Importers and Breeders of Belgian Draft Horses, the American Shire Horse Association, the California Conference of Boys' and Girls' Agricultural clubs, the Ayrshire Breeders' Association, the American Galloway Breeders' Association, the American Shorthorn Breeders' Association, the American Aberdeen Angus Association, the State Humane Association of California, the Red Polled Cattle Club, the Polled Durham Breeders' Association and the California Creamery Operators' Association.

One feature absolutely new to expositions is the World's Insurance Congress, which will be held in connection with the Panama-Pacific Exposition, San Francisco, October 4-16. Commissioner Hathaway writes regarding this feature:

"Insurance, recognized in this exposition under the head of social economy, is up for public inspection and understanding in the proceedings of the congress, as outlined in the program, which contains many names of national prominence. Your readers are the real interested parties. They are invited to attend the sessions. We believe there is no other way in which

your space could be better utilized to their advantage than by making known to them this invitation and the objects of the congress.

LIVE STOCK EVENTS

Horses, mules and asses, September 30-October 13; cattle, beef and dairy, October 18-November 1; sheep, goats and swine, November 3-November 15; car lots of live stock, November 11-November 14; poultry and pigeons, November 18-November 28; dogs, cats and pet stock, November 29-December 1; children's pets, December 1-3.

The exposition is making arrangements for a great event for the boys and girls. There will be an exposition pet show December 1-3. Chief Lively writes that there will be pets of 100,000 American children on exhibition in the live stock section. The pets will be received on Tuesday, November 30. Any boys and girls interested should write Chief Lively at once. It matters not whether the pets are birds, fish, quadrupeds or even reptiles, Mr. Lively promises the best attention and not a penny to be charged for fees.

Don't neglect a visit to the model post office. A balcony has been arranged so that one may inspect the workings of an up-to-date post office. It is not, however, simply a model for it is the post office for the grounds. Those who may wish to receive mail on the grounds may be addressed "General Delivery, Model Post Office, Exposition Grounds, S. F."

The great Autumn Music Festival will be held in Festival Hall, September 29 to October 3. The events during these few days are said to be the "climax of a wonderful cycle of epoch-making events." No previous international exposition has brought together so many great artists.

The wonderful grounds and gardens of the exposition, with all varieties of rare and exquisite flowers blooming and fountains playing amid splendid groups of sculpturing, will be in the height of their glory in October, a period of plentiful sunshine and no winds or fogs.

Poultrymen are getting ready for a great show. It will be many years before poultrymen of this coast will have another such opportunity. November 16 has been named as American Poultry Association Day or Poultrymen's Day.

The Society of American Foresters will meet on October 18. H. S. Graves, chief forester of the United States government, will be the principal speaker. Hundreds of rangers are expected to be present.

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Next week, September 27 to October 1, the W. C. T. U. of California will hold its exposition convention at the First M. E. Church, Oakland.

The California State Automobile Association meets at the exposition October 6.

Don't forget the Joy Zone. It is not all good, neither is it all bad, and it is well worth several visits.

There are several battleships at anchor off the Marina, some of them are very close to land.

There will be harness and running races each afternoon next week.

The Society Horse Show begins on Thursday, September 30.

DRAFT HORSE BREEDERS

The annual meeting of the California Draft Horse Breeders' Association will be held in Congress Hall in the Exposition Grounds, San Francisco, October 1, 1915, at 5:00 o'clock p. m.

At this time the annual report of the president and secretary will be given, and besides the regular business meeting a general discussion of the draft horse business and its future will take place.

At 7:00 o'clock p. m. a banquet will be held at the Stewart Hotel, together with the following program:

"The Draft Horse," by John Truman,



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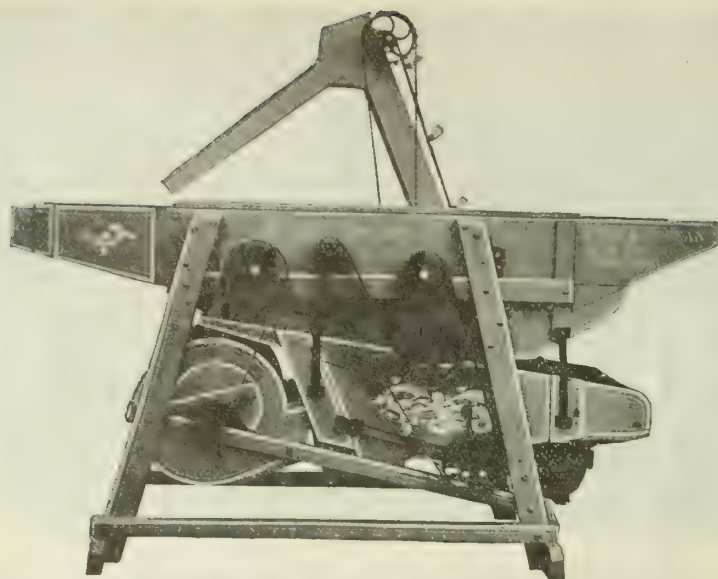
Bean Spray Pump Co.
San Jose, Cal.



president Truman Pioneer Stud Farm; "Draft Horse Breeding," by Samuel Bell, president American Belgian Horse Association; "The Horse and His Relations to Agriculture," by C. F. Curtiss, dean of Iowa State College of Agriculture.—J. I. Thompson, Secretary.

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General Agriculture



CROPS BETWEEN ORCHARD TREES

Written for the California Cultivator
By Sacramento Valley Contributor



IN regard to the planting of
crops between the rows of
young orchards, the experi-
ence of this season teaches
some useful lessons.

In different parts of the Sacramento Valley many kinds of crops have been planted with varying sorts of care. In some orchards that have been given good care, sufficient cultivation and irrigation, and where there has been a strip of land not planted for five to ten feet on each side of the tree row, intercrops have been grown that will return some revenue, and the trees have made splendid growth. Beans, corn and alfalfa have proven satisfactory under these conditions. The bean and alfalfa crops probably store up some nitrogen for the use of the trees, the roots of the alfalfa particularly, and the beans to a greater or less extent, tend to loosen up the subsoil, and if there is plenty of fertility and moisture available for both trees and intercrop there is no apparent disadvantage in growing something that will make a part of the cost of caring for the orchard. Whether these crops are taking out fertility that will have to be replaced at greater cost than the revenue received remains to be seen. The analyses of some of these rich Sacramento Valley soils indicate that there is sufficient fertility in them to last for a great many years, so that the gain in nitrogen and mechanical condition from the alfalfa might be more than enough to offset the need of phosphorus or potash a hundred years from now. Where intercrops are grown it is not quite so easy to spray and care for the trees as when the land is clean cultivated, but the difference so far as actual cost is concerned is not great.

Intercrops have been planted in other orchards where the trees have been given less cultivation, the moisture supply has been more limited, and the trees have either barely lived through the season or have made very little growth. The loss of growth on the trees has been much greater than the possible gain from the intercrop.

In other places where an intercrop like corn was planted within two or three feet of the tree rows and solidly in the interspace between the trees, and neither the trees nor the corn cultivated or irrigated, the life of a large percentage of the trees has been sacrificed for a crop of corn. The corn is such a gross feeder and has made such a rank growth that it has taken practically all of the moisture available. Moisture being the limiting factor, the trees have perished. It is unnecessary to point out the folly of such a procedure.

There have been instances where the intercrop has been allowed to encroach more closely on the tree rows than was good for the best growth of the trees. It is better to give the trees more room than they actually require than to curtail their growth in any way, because the trees and not the intercrop should make the most money or the trees should not be planted at all.

In a good many orchards pumpkins are planted after the ground has been thoroughly cultivated and irrigated and is practically ready to be "laid by" for the season. There is ample moisture for the needs of the trees and the weeds have been well killed out. One row of pumpkins planted late in June down the center between the tree rows does the trees no harm as far as moisture removal is concerned and makes a lot of good hog feed.

COMING FAIRS CALIFORNIA

No state fair will be held this year on account of the Panama Exposition.

Mountain Farm Bureau Fair, Oakhurst, Madera County, September 27.

Fresno District Fair, Sept. 28-Oct. 2.

Riverside District Fair, Oct. 5-9.

Livermore, Land Products and Stock Show, Livermore, October 8.

Stock Show, Livermore, October 8.

South San Joaquin District Fair, Manteca, October 8-9.

Orange County Fair, Santa Ana, Oct. 12-16.

National Orange Show, San Bernardino, Feb. 17-24, 1916.

ARIZONA

Santa Cruz County Fair, Sonoita, October 8-9.

Northern Arizona Fair, Prescott, October 21-23.

Southern Arizona Fair, Tucson, November 4-6.

State Fair, Phoenix, Nov. 15-20.

COLORADO

Farmers and Stockgrowers' Fair, Burlington, Sept. 22-25.

Montezuma County Fair, Cortez, Sept. 21-24.

Las Animas County Fair, Trinidad, Sept. 21-24.

Soil Products Exposition, Denver, Sept. 27-Oct. 9.

El Paso County Fair, Calhan, Sept. 29-Oct. 2.

Colorado Agricultural Fair, Overland Park, Denver, Oct. 2-9.

Dry Farming Congress, Denver, Oct. 30-Nov. 10.

IDAHO

State Fair, Caldwell, Sept. 27-Oct. 1.

Northwest Livestock Show, Lewiston, Nov. 29-Dec. 4.

MONTANA

State Fair, Helena, Sept. 20-25.

OREGON

State Fair, Salem, Sept. 27-Oct. 2.

Clackamas County Fair, Canby, Sept. 20-23.

Pacific International Live Stock Show, Portland, Dec. 6-11.

UTAH

State Fair, Salt Lake City, Sept. 26-Oct. 3.

WASHINGTON

State Fair, North Yakima, Sept. 20-25.

Corn and Hog Show, Prosser, Oct. 22-24.

Stevens County Live Stock Show, Oct. 27-30.

Western National Dairy Show, Seattle, Nov. 8-13.

Cascade International Stock Show, North Yakima, Nov. 22-27.

WYOMING

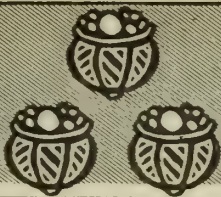
State Fair, Douglas, Sept. 26-Oct. 2.

NEW MEXICO

New Mexico State Fair, Albuquerque, October 11-16.

Small Fruits

Vegetables



POTATO GROWERS' MEETING

THE state commission of horticulture, together with W. V. Shear, expert connected with the department of agriculture, have been hold a series of meetings or institutes with farmers in various potato growing sections. These meetings have been held in Bakersfield, El Monte, Perris, Salinas and Stockton. The attendance has been only fair, which is much to be regretted for the addresses of Mr. Shear and Mr. Weldon were well worth attention by the potato grower who wishes to secure the best returns for his labor. At one of these meetings, that at El Monte, there were two sessions announced, and at the first one of these not a single grower was present from the locality in which the meeting was held. There were attendants from Hollywood, Inglewood, Wilmar, San Gabriel, Manhattan Beach and other sections of Los Angeles County. In El Monte, with an acreage of over 2000 devoted to potatoes, not one grower attended this particular session. We have had occasion to chronicle scant attendance at these helpful meetings at other times, but never before have we known of a meeting at which no one was present from the community in which the meeting was held.

Owing to the small attendance at the El Monte meeting, the sessions took the nature of a round table conference. A large exhibit of potatoes with various diseases and pests was discussed and explained by Mr. Shear. Of course, potato tuber moth called for extended discussions. Best treatment is prevention, keeping potatoes where moth cannot reach them, use absolutely clean seed, keep the growing crop well hilled up, as soon as crop is dug destroy or feed all culls and keep the stored crop protected. If stalks are infested, burn all tops. About the only treatment for nematodes and similar pests is crop rotation. Starve them out of the soil by growing crops which will not afford feed. For rotation crops Mr. Shear remarked that it depended entirely upon the section and on the crops which were adapted, but as a suggestion he offered barley, corn, alfalfa, cabbage and similar crops. Beans were also given as a possible crop, but these are also subject to many of the pests which infest potatoes.

For prevention of scab the soil must also be clean and free from fungus. All seed should be treated, for it is practically impossible to get seed entirely free from this pest. Mr. Shear recommended a dip composed of four ounces corrosive sublimate (bichloride of mercury) dissolved in 30 gallons of water. The best method is to dissolve the corrosive sublimate in a pint of boiling water, then add to the larger quantity of water, which should be in a barrel. The 30 gallons in a barrel will be about the right quantity for a sack of potatoes, which may be immersed in the barrel and permitted to remain for an hour and a half. This same solution will answer for treating five or six sacks. It should then be emptied and new solution used. This treatment costs only about 30 cents per acre and the results are so pro-

nounced that no grower can afford to grow potatoes without using this method.

How to get good seed was one of the points discussed at these institutes. Mr. Shear referred to the new law which permits certification as to quality of seed and recommended every grower should make an effort to produce seed which could secure certification. Unfortunately, it will probably be many years before this certified seed will be very general, this because growers are finding many obstacles in producing a seed which will pass. There must be three inspections while the crop is growing. One of these inspections is at blossoming time, this to be sure that there is only one variety in the field; another important inspection is when the crop is nearly

mature. At that time 100 hills are dug to see if weight comes up to standard and also to determine as to whether five of these hills shall each weigh less than 30 per cent of the average. If it does, the field is disqualified. Then, of course, there must be no eel worms, tuber moth, powdery scab nor wart disease and the crop must be practically free from late blight, scab and rhizoctonia.

Why should this country import \$2,801,974 worth of tomato paste from Italy, as was done last year? It is made by crushing the tomatoes, straining out the skins and seeds and reducing the pulp to about one-fourth its original volume by evaporation in vacuum boilers, although for special purposes it is reduced to as little as one-twelfth. It is used in Italy in a great many dishes, perhaps the most familiar of which to Americans is spaghetti. The demand was created by Italians who moved to this country, but has spread among Americans. We grow tomatoes enough on this side of the water to prepare this paste.—Rural New Yorker.

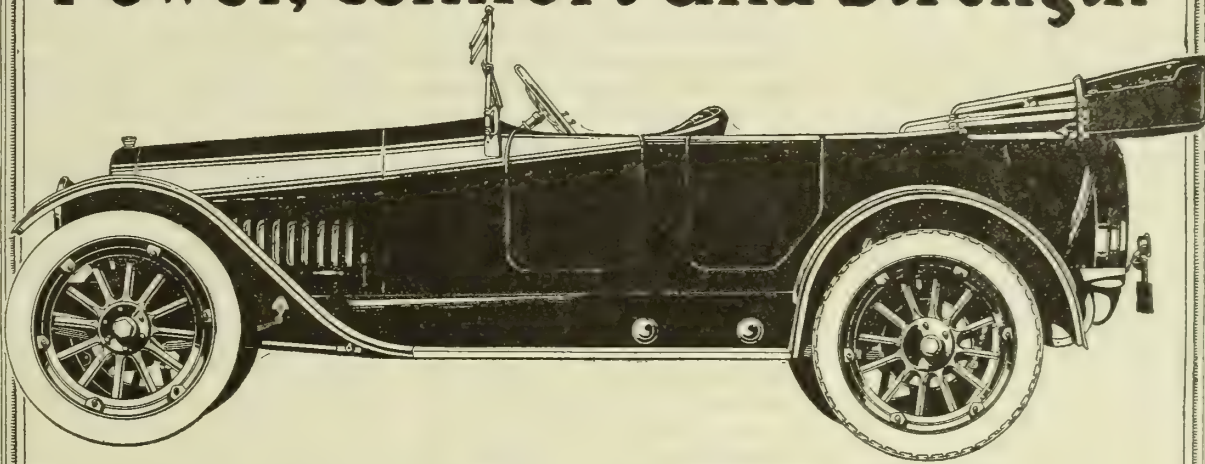
CUCUMBER AND MELON BEETLES

Cucumber and melon vines are often infested for the second time in a season with the striped beetle. I have heard of some novel methods of getting rid of these pests. One farmer soaks corn cobs in coal oil and sticks them in soil about the hills of cucumbers or melons. He says the bugs go another way. Another grower tells me he soaks an old rag with carbolic acid and lays it on the hill among the vines. Still another says he always plants two or three onions in each melon or cucumber hill, and he declared he has no striped bugs at all.

One gardener has a large torch, and when he discovers these bugs about the patch of vines he lights the torch and holds it near the vines, not close enough to burn the leaves, but near enough to attract the bugs which fly into the flame and are burned to death.

I have found it just as easy and effective to dust the vines with dry Paris green while the vines are damp. It is applied with a puffer or bellows as the potato tops are treated with the same poison.—Successful Farming.

2925 Lbs. of Beauty, Silence, Power, Comfort and Strength



This is the unique way one owner of THE SIX of '16 describes the latest Mitchell masterpiece. This beautiful, long, luxurious car calls for a new method of description.

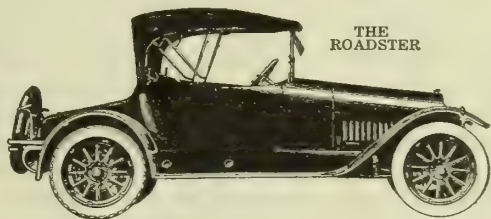
All predictions for its success have been surpassed, but by pushing the factory to its utmost limit—twenty-four hours a day, seven days a week—we are able to meet the demand, so that immediate deliveries are possible.

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Every car delivered creates enthusiasm that sells another car. Words cannot describe THE SIX of '16. You must see it—feel the wheel—get the thrill of its smooth action.

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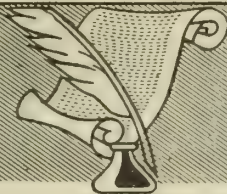
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geles, California, as Second-Class Matter.**Thursday, Sept. 23, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**GREAT IS CORN**The corn crop this year will ag-
gregate the enormous total of 3,000-
000,000 bushels. Illinois stands at the
head with a production of 358,600,000
bushels. California is not even men-
tioned as among those present. Wis-
consin is the smallest producer of
corn named in the list sent out by the
department of agriculture, and it will
produce 40,900,000 bushels. Califor-
nia with its little 2,000,000 bushels
cannot qualify as a corn state.Here is opportunity for develop-
ment.**THE LAW**There is an organization which
is called the Camp Fire Girls, recently
started in order primarily to help the
working girl. There are three ranks
which a girl may obtain by being a
member of this organization; first,
wood gatherer; next, fire maker;
finally, torch bearer. Following is the
law of the organization: "Seek beau-
ty; give service; pursue knowledge;
be trustworthy; hold on to health; glo-
rify work and be happy."We take it that the first clause,
"Seek Beauty" refers not to beauty of
person like unto the marshmallow,
which some girls seek, but the beauty
of the mountains and hills and others
of the treasures of nature. Including
that and all the other laws we believe
they are adapted to all of us and might
well make a good working motto.**RURAL CREDIT**We call attention to the address
of Mr. Herrick made this week at the
Rural Credits Congress held at the
exposition. It contains a fund of in-
formation which is worth careful
reading. Many would have a form of
rural credit which would enable any-
one who desired to be a farmer tosimply indicate to "the government"
the need and the money would be
forthcoming. One's credit is not built
up in a moment. It must follow years
of saving, the foundation on which all
credit is built. We understand there
are times when a money lender will
take a "moral risk" but when this is
done it is usually because the moral
risk is almost equivalent to an estab-
lished reserve. This has been made
plain to us all in a most emphatic
way during the last few days. Eng-
land and France came to the money
markets and asked for credit to the
extent of a billion dollars. These two
great nations are supposed to have
a credit practically unlimited but we
have all seen that American capital-
ists were not quick to come forward
with the desired billion until these
two nations produced the best of se-
curities for collateral.increase his prosperity with the idea
that the prosperity of the merchant
comes primarily from the farmer. We
do not believe there was ever a time
in the history of agriculture when
merchant and manufacturer were
uniting so freely with the farmer in
organizing and financing movements
which look to bettering agricultural
conditions.**IRRIGATION CONGRESS**The longest and most important
session yet held by that important
body, the International Irrigation Con-
gress, closed on Tuesday in San Fran-
cisco. Meetings have been held in
Stockton, Fresno, Sacramento and San
Francisco. The last day, while given
up to a discussion of rural credits, was
only an extension of the irrigation con-
gress.

Amongst recommendations made

THE MERCHANT'S STORYOne of our greatest storekeepers was asked why he spent so much
money in advertising. People knew all about him; he had the best store
in the city and he did the largest business. This was his reply:"I advertise in the papers simply because it is the cheapest way in
which I can deliver the story of my goods and tell it to the greatest num-
ber of people who ought to be my customers. The space in my store is
limited; I want to carry all the goods I can and I want to get as many
customers in there as possible."If I tell the story of my merchandise in print the customers know all
about it when they come to the store; they ask for what they want, get it
very quickly and make room for others. We could not possibly handle
half our trade if the clerks had to stop and explain everything or intro-
duce the goods to the customers, so by a little money spent in advertising,
I fill my store more often, handle more merchandise and keep fewer clerks.
It is the most satisfactory way in which to do business because it is
cheapest."Many national advertisers believe that the country storekeeper has not
time to fully learn all the facts regarding some articles so as to fully
explain their merits, and so these national advertisers spend large sums
of money in order to tell the correct and complete story direct to the
buyer, and thus they send customers into the local store fully posted as
to what they want. This saves the storekeeper a lot of time and expense,
because it saves a lot of unnecessary conversation.Advertising is the greatest salesman the world has ever known and it
is by all odds the most dependable. We want our readers to realize this
—we want them to understand that the only possible hope for advertising
to be successful is to keep it truthful. We believe this to such an extent
that we guarantee all our advertisers will treat you fairly, as you may see
by reading the notice at head of this page.The American farmer must expect
to secure his credit in the same labor-
ious way. However, if our crops are
to be produced and harvested and
marketed there must be some arrange-
ment by which a fairer system of
credit may be extended than has pre-
vailed in the past, and this is a task
worth the effort of both state and na-
tion.**EFFICIENT BOOSTING**California has done some strong
boosting for itself. In fact, our abil-
ity to put our best foot forward before
all the world has been remarked up-
on since the days of '49. Some delin-
quents have at times appealed to this
spirit with "Don't knock, be a boost-
er!" Now we believe there are times
when a good, vigorous kick is required
and it can be given by the average
Californian when necessary.But as to boosting, there is a justi-
fiable and constructive kind and this
is the variety being engaged in by the
Riverside County chamber of com-
merce. This is a new organization
which is beginning at home with its
work. It is composed of local cham-
bers of commerce the county over,
with in addition many producers who
are not members of the regular com-
merce bodies. The first work to be
taken up by this organization is to
encourage the farmer to organize andwere: State engineers should inspect
every proposed irrigation district prior
to its organization, this in order to
protect investors; the United States
Reclamation Service should be put on
a financial basis in order that the ex-
pense of its administrative work in
Washington may be met out of a gen-
eral fund and not charged to pioneer
settlers; that a committee be ap-
pointed to investigate the feasibility of
erecting a permanent home for the
International Irrigation Congress. It
was urged that the congress of the
United States be asked to pass a bill to
establish a national marketing com-
mission. Rural credits were fully and
completely endorsed. There is general
disappointment at the failure to en-
dorse the Newlands-Broussard re-
clamation bill. The principles of the
Newlands bill were fully endorsed but
there was a feeling that the details
had not yet been sufficiently worked
out to endorse the bill as presented.Officers for the coming year are
Richard L. Burgess of El Paso, presi-
dent; J. S. Dennis of Calgary, Can.,
first vice-president; George Albert
Smith of Salt Lake, second vice-presi-
dent; L. A. Nares of Fresno, third vice-
president; Kurt Glumwald of Denver,
fourth vice-president; L. Clapp of
Hatch, N. M., fifth vice-president;
Arthur Hooker of Spokane, secretary.
The next place of meeting was left in
the hands of the board of governors.**Agricultural Notes**The Erie railroad leases to farmers
strips of right of way along its tracks.A large factory for the manufacture
of alcohol from sweet potatoes is lo-
cated in Lagoa, Azores Islands.A cooperative fruit marketing asso-
ciation has been formed by fruit grow-
ers and shippers of Havana. It is
to be known as the Cuban Fruit Ex-
change.To relieve sections of the country af-
fected by drouth the Brazilian govern-
ment has appropriated a sum of money
equivalent to a million and a quarter
dollars.A cannery factory at Sodus, New
York, has been experimenting with
cherry pits this season. The pits are
first dried and then crushed in prepa-
ration for a process which extracts
the flavor of the kernels. The ex-
tract obtained is used to give flavor
to the canned fruit, the report says.A sub-tropical plant experiment sta-
tion has been established near Miami,
Florida, by the United States depart-
ment of agriculture. Work has been
done along this line on a small leased
tract of six acres for some 17 years;
the new tract is much larger and has
been purchased for permanent experi-
ment grounds.The peach crop of the country will
amount this year, it is estimated, to
more than fifty-eight million bushels.
Georgia ships practically double the
amount of any other state, 4,803 car-
loads coming from there in 1914. Cal-
ifornia, Washington, Ohio, Michigan
and Colorado follow with shipments
of between two and three thousand
cars.The citrus fruit industry of Pales-
tine, which prior to the war was rap-
idly becoming of great commercial im-
portance to that historic country, is
experiencing serious reverses. Added
to these troubles, a scourge of locusts
has now devastated the citrus groves
of Syria, taking, it is reported, about
two-thirds of this season's orange,
mandarin and citron crop. The lo-
custs have eaten all the leaves and
peeled the small branches of the cit-
rus trees.The blow in the face received by
American industries through condi-
tions brought about by the European
war has acted as a tonic, has forced
the nation to create new branches and
enlarge the scope of existing phases
of manufacture, opened the way to
utilize, on a vast scale, great natural
resources of the United States, and
induced manufacturers and merchants
to expand their markets into foreign
fields with prospects of permanent re-
sults, says the bureau of foreign and
domestic commerce of the department
of commerce in a forecast of the ef-
fect of the war on the industrial fu-
ture of the country.From Port Limon, Costa Rica, comes
an account of attempts to utilize
bananas rejected for shipment. Here-
tofore great quantities of the fruit
have been thrown overboard by inspec-
tors, one bunch because it is a little
bruised, another because it has grown
too loosely, another because it has less
than eight "hands." Stock will eat
green bananas, but the amount thrown
in the bay at Port Limon alone, for ex-
ample, is enough to feed five times
the head of stock in the place and all
the people as well. Several plants
have been established to manufacture
banana flour, chips and "figs." The
latter are simply ripe bananas dried by
artificial heat.

Agricultural News Notes



of the Pacific Coast

Northern California

The Santa Rosa Republican reports the recent sale of 1914 hops at 14 cents a pound.

The St. Helena Vintage Festival and Napa County Fair called out an attendance of over 6000.

The Yolo County farm bureau fair, held early in September at Woodland, was a complete success.

A hop kiln containing 24,000 pounds of hops was destroyed at Hopland, Mendocino County, last week.

Sonoma County's first bean thresher is being tested out on the 180-acre ranch of Mr. Gillou near Windsor.

Sonoma County poultrymen are planning to make a hard fight to maintain the constitutionality of the Chinese egg bill.

The Diamond Match Company of Chico last week sent a large shipment of beehives and bee supplies to Valparaiso, Chile.

The Business Mens' Association of Chico, Butte County, is starting a movement for the appointment of a farm adviser.

Humboldt County held its 20th annual agricultural fair at Ferndale, beginning September 7 and continuing for the rest of the week.

The Pomona Grange of Sonoma County has decided to make an exhibit of products in Oakland at the time of the national grange meeting.

The Sutter County branch of the State Farmers Protective League was organized at a recent meeting of farmers and fruit growers held at Bogue Hall.

Dates for Placer County farm bureau meetings are announced for September 24 at Sheridan, September 25, Mt. Vernon, 27, Roseville, and at New Castle.

Orange growers of Butte County are appealing for relief from the "eight-to-one" ruling. They hope to have a change made by which seven parts of solids to one of acid in oranges will be granted.

Farm Adviser Rubel of Alameda County has arranged a series of poultry meetings. The Livermore center is preparing for a combined land products and stock show to be held Saturday, October 9.

Farm Adviser Searls of Yolo County reports that the county farm bureau will ship this year several hundred tons of alfalfa hay to Napa and Humboldt Counties, and that a county in Washington is asking for quotations on alfalfa hay.

The state compensation commission has made a ruling that all accidents in which a laborer is injured on the farm must be reported to the state commission. The commission states that 6,500 farmers of the state have elected to come under the provisions of the act.

According to estimates of hop buyers California's hop crop this year will reach 120,000 bales. Sonoma is expected to produce 30,000 bales; Mendocino, 15,000; Sacramento, 57,000. The state of Oregon is expected to produce from 130,000 to 140,000 bales and Washington 45,000 bales.

Central California

The Modesto irrigation district will expend this year \$50,000 for improvements.

A field of rice planted at Modesto in Stanislaus County is reported in exceptionally fine condition.

The work of organizing the peach growers into a large cooperative organization is progressing satisfactorily.

Tuesday was observed as Rural Credits Day at the P. P. I. E., James Madison of Fresno making one of the principal addresses.

A total of 156 cars of grapes, chiefly Malagas, have been sold this season from the Fresno district to the Pioneer Fruit Company.

Millers and grain growers of Central California met recently at Stockton and discussed the matter of shipping grain in bulk instead of in sacks.

The Fresno District Fair will run largely to vaudeville attractions. One of the principal features will be a historical drama of the San Joaquin Valley.

A number of peach growers of Tulare County met recently at Visalia to discuss plans for the establishment of a cooperative cannery in Visalia or Farmersville.

A Lodi grape grower proposes to dry his low grade grapes and use as stock feed. He thinks a pound of these dried grapes contains more feed value than a pound of barley.

The Stanislaus County farm bureau will hold meetings at Patterson Friday, the 24th, at Salida, Monday, the 27th, at Hickman, Wednesday, September 29.

One close observer maintains that the farms of Madero County have been increased in value to the extent of \$1000 each since the establishment of the farm bureau and farm adviser in that county.

The cannery of the Tulare County Growers' Association has closed its season's run. It has handled over 35,000 cases of peaches. To put up this amount required the handling of 1100 tons of green fruit.

The following institutes are announced for Monterey County by the state university: September 28, Greenfield; September 29, Loneoak; September 30, San Lucas; October 1, Lockwood; October 2, San Ardo.

The California Associated Raisin Company has definitely announced that it will buy wine grapes and make them into wine. This action was taken to prevent growers from making wine grapes into an inferior quality of raisins.

A trial is being made of the state fruit standardization law in Tulare County. One Dinuba County packer has been declared guilty of packing mildewed grapes. He has given notice that he will appeal to the higher courts if necessary.

The Corralitos, (Santa Cruz County) Fruit Growers' Association recently sold 50 cars of Newtowns to one San Francisco concern. Another sale of 90 cars was made and the total sales for the one association in a period of three days aggregated 140 cars.

Southern California

The cannery at Yucaipa, San Bernardino County, will start on tomatoes today.

An orange marmalade factory has been established at Anaheim in Orange County.

Walnut growers are anticipating this as one of the most successful seasons of the industry.

Pomona estimates she will produce about 250 tons of walnuts. The harvest is now under way.

The East Highlands (San Bernardino County) Citrus Association is constructing a \$10,000 packing house.

The Antelope Valley in Los Angeles County is receiving large numbers of dairy cows from the San Joaquin Valley.

Walnut picking is well started in Orange County. Very little damage was done to the nuts by the recent hot weather.

Apricot growers are feeling more hopeful as to the dried apricot situation, some sales having been made around seven cents.

Horticultural Commissioner Waite of Imperial County reports a considerable amount of damage done by grasshoppers this year.

Anaheim producers have decided to install a prize-winning exhibit at the Orange County fair to be held at Santa Ana, October 12-16.

A fine market grade of rice has been grown eight miles below the border in Mexico on the ranch of the Pacific Land and Cattle Company.

San Bernardino County veterinarians have been making tests of various dairy herds and find remarkable freedom from bovine tuberculosis.

Horticultural Commissioner Wood of Los Angeles County has given warning to the pear growers of Lancaster that they must be prepared to fight pear blight.

The chamber of commerce is working with peach growers in the neighborhood of Chino in San Bernardino County in the effort to organize a cooperative cannery.

A committee of boosters in charge of the National Orange Show to be held in San Bernardino early in 1916 promise the most liberal offerings of premiums yet made.

Peach growers of Yucaipa, San Bernardino County, have united to stop thieving in their orchards. They report that peaches have been carried away by the wagonload without the formality of consulting owners.

Oak Glen, the Yucaipa Valley, and other sections near Redlands, are planning for the greatest apple show yet held in Southern California. It will be held some time during November. Beaumont, Banning and other Riverside County sections will join.

Experts from cotton mills in China have been in the Imperial section making investigations as to length of staple and other qualities of the cotton crop. It is reported that the experts were satisfied with the quality and many shipments of cotton to China will be made.

The Coast

Seattle is shipping liberally of Spitzenberg and Jonathan apples to Alaska.

The crop of prunes at Monmouth, Oregon, is reported to be the lightest in many years.

Dairymen of Walla Walla, Washington, have decided to organize a cow testing association.

There are approximately 11,000 people gathering hops in the vicinity of Rickreall, Oregon.

A bunch of 100 convicts from the penitentiary at Salem, Oregon, have been working in the flax fields of Gaston.

The most disastrous grain fire of the season in Umatilla County, Oregon, destroyed more than 2000 sacks of wheat near Helix.

The Mutual Creamery Company of Pocatello, Idaho, has decided to distribute to dairymen in Idaho and Utah dairy centers 20,000 pure bred cattle.

The exhibit of Holsteins at the Interstate Agricultural Fair, held at Spokane, is said to have been the largest of pure bred stock brought together in the Northwest.

Live stock men of Eastern Washington report that on account of low prices on wheat and barley live stock is meeting with good demand, with indication of advance.

The indications are that the Cascade International Stock Show which will be held at Pullman, Washington, November 22-27, will bring out at least 40 carloads of pure bred stock.

Owing to the shortage of mutton farmers of the Northwest have been appealed to to grow more sheep. The shortage the country over is estimated to be in excess of half a million sheep.

The Spokane Fruit Growers' Company has adopted a minimum wage scale to be paid to apple workers during the coming season. The membership of this company has increased largely this summer.

Hop growers of Oregon are disappointed over the small crop that is being harvested this year. The yield has been much under the amount estimated. It is now thought that the crop will not be more than 100,000 bales.

The Oregon agricultural college at Corvallis reports a cow in one of the cow testing associations which gave a total of 8025 pounds of milk, containing 419 pounds of butter fat. Records were kept as to cost of feed which was \$39. The net profit on this cow was \$87.

Walnut growers of Oregon and Washington have formed an association to be known as the Western Walnut Association. H. V. Meade of Orasco has been elected secretary. The first annual convention of the new association will be held at Portland, November 3.

Twelve farmers were arrested at the farmers' market in Salt Lake City, Utah, the early part of this month by federal and state officials. They were charged with violating the new net container law which provides that quantity of contents must be plainly marked on outside of package.

YOU CAN BE RICH

**Your opportunity is at hand.
Start right by buying at the**

World's Greatest Sale

Sacramento, Oct. 6-7, 1915

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WOODLAND

McAlister & Son
CHINO

175 Holsteins of Quality 175
Tuberculin Tested

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in number of great yearly record cows.
in number of daughters of great record cows.
in number of sons of great record cows.
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to the value of their offspring which, in many cases, will be worth more than their dams bring.

Does Your Farm Pay?

or perhaps it is even losing money for you. If so, it is because you have neglected to investigate and engage in one of the most important branches of the industry.

Ten years ago registered Holsteins in the United States were worth less than \$8,000,000, today they are worth \$85,000,000.

Last January one herd in New York was dispersed for \$150,000, and its recent owner made over a quarter of a million dollars in a dozen years out of Holsteins alone. Does this appeal to you? If so, attend the

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Write for Catalog

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Live Stock and Dairy



SCRUBS AND PURE-BREDS

Written for the California Cultivator
By Sacramento Valley Contributor



FARMER moved to one of the newly developed sections of the Sacramento Valley from a Middle Western state.

He had been a renter there and had saved up enough money to buy a farm on the installment plan, plant a small orchard and some alfalfa.

Being a hard worker and knowing the farming business, doing some work for his neighbors and for non-residents who had planted trees, he is getting along and paying for a farm that will return to him a better living than he could have secured on a rented farm in the East. And this farm is his own. He works hard, but he has always done that, and when his orchard comes into bearing he hopes to be able to take things easier, at least for a part of the time.

Coming from the corn belt he knows hogs, and one of the first things he did after he got started here was to buy some sows and a boar from a neighbor. They were common California hogs, just common, ordinary hogs.

Our Eastern friend took care of them much the same as he would have in the East, and because of the more favorable conditions here expected them to do as well or better than his hogs had there.

He was doomed to disappointment, however. They did not grow as they should, and as they aged they seemed to get longer in the snout and lighter in the ham. They were hard to keep within fences and were able to rustle, but showed no indication toward early maturity. To keep a hog more than a year did not meet with this raiser's notions of the hog business, so he decided there must be something wrong with California as a place to produce hogs.

This led to an investigation of what others were doing with hogs, and he found that where high grade or registered hogs were being kept and where they were given anything like the care and attention that hogs require in the East very satisfactory results were being obtained.

He found registered hogs making gains of a pound a day when they weigh about 100 pounds and occasionally one making a pound a day from birth to six months old, 180 pounds at 180 days, some even doing better than that.

He found that where farmers were using registered boars they were getting pigs that were not only of better type, but that were ready for market long before the common scrubs.

Now he has sold all of his mongrel hogs and has bought a few high grade sows and a registered boar. His hogs are working for him instead of the converse.

PROPOSED MARGARIN LEGISLATION

The National Dairy Union, an organization of dairymen of the United States, is sending out the draft of a proposed bill to be introduced at the next session of congress. The objects of the bill are to change the name of

oleomargarine to margarin, to change the rate of taxes, to make all substitutes of dairy products subject to laws of states and territories into which they may be transported, and to make other amendments to the original oleomargarine bill.

Section 11 of this act provides for a more efficient means of detection of fraud by giving greater power to the bureau of internal revenue. Amongst its provisions are:

"No margarin shall be manufactured in imitation or semblance of butter of any shade of yellow—for the purpose of this act margarin shall be deemed to be in such imitation or semblance of butter of any shade of yellow, if the diffuse reflecting power for light of wave length 436 micro millimeters is less than 70 per cent of the diffuse reflecting power for light of wave length 578 micro millimeters the temperature of sample being 70 to 80 degrees Fahrenheit; no margarin shall be manufactured by mixing butter with the same or which contains more than 5 per cent of milk fat. If any person who sells, vends or furnishes margarin for the use and consumption of others, except to his own family table without compensation of others, except to his own family table in any coloration that causes it to look like butter of any shade of yellow such act shall be deemed a violation of this law. Any person violating any provision of this section shall pay for the first violation thereof not less than \$100, nor more than \$1000, and for each subsequent violation not less than \$500 nor more than \$5000 or be punished by imprisonment of not less than six months nor more than two years, or by both fines and imprisonment."

The dairymen of the United States cannot object to the manufacture of margarin nor to its sale as such, but they do object, and most properly, to its masquerading under the name of a dairy product which costs many times as much to produce. Their attitude is the same as that of the olive grower who pays a dollar or two dollars per gallon as the cost of manufacturing olive oil. He naturally rebels when the cottonseed oil producer, who has put into the cost of the manufacture of a barrel of cottonseed oil less than the olive producer has put into the manufacture of his gallon, endeavors to sell it under the name of olive oil. Cottonseed oil is a fine food product and we doubt not its use will greatly increase, but none of us wish to buy it on the olive oil basis.

BUY REGISTERED BOARS NOW

Written for the California Cultivator
W. S. Guilford

I would say to every producer of hogs in California who is not using a registered boar at the head of his herd that now is the time to buy one, for if there are no sows to be bred just at this time it will not be long before there will be, and by buying now and having a pure bred sire ready to use when needed there will be no question of using a grade or scrub animal just because he is handy and because you do not know just where to "pick up" a pure bred on short notice.

It is a big advantage to have a male

breeding animal on the farm for some days or weeks before he is to be used so that he may become accustomed or wonted to his quarters, feed and new conditions. It is well to feed him a ration nearly like the one he has been used to—if that ration has been a properly balanced one. If not, the principal feed or feeds could be continued in use and such additions made as may be thought necessary. For instance, if he has been getting an exclusive barley diet, this should be supplemented with alfalfa, tankage, oil meal or middlings, and if the feed has been exclusively alfalfa, some barley can be fed if he is to be used heavily soon.

The best age at which to buy a registered boar depends on the use to be made of him, the price desired to pay and the conveniences for handling the animal.

Many choose to buy a pig soon after weaning time and grow him to maturity themselves. The cost price is less, the cost of shipping by express is lower, he can be fed and developed as desired by the new owner, and when he is needed he is perfectly at home, is not shy and nervous as boars sometimes are when first brought to a new place.

Others prefer to buy a boar that is ready to use, say at eight months to a year old, or a little older, a young animal with a life of usefulness before him. He costs more, but there has been no bother in growing him and he comes to his new owner a finished product.

Another class of boar buyers favor securing an older animal that has been a proven breeder in some good herd. There is very little experiment in using such a sire, for his pigs are the test of his usefulness. Old, tried boars, in good condition at three to five years old, should be in their very prime if they have been properly handled. A Berkshire boar older than this will be used as one of the five or six herd boars at the Butte City Ranch at Butte City, Glenn County, this season, and litters sired by him during the past year indicate that he may get something sensational.

There is no breeder of hogs in California who can afford to use anything but a registered boar. If a boar sires pigs, and they weigh only ten pounds more at six months old than they would have if sired by a scrub boar, this 1000 pounds of pork is worth six cents per pound and there is a profit of \$60 on one crop of pigs, to say nothing of the added value to those to be kept as breeders.

OUR COVER

The illustrations used on our cover page this week are of a couple of heifers which may sometime be making themselves known in the dairy world. They carry the blood of some great producers and there have been many stranger things than that either of these fine animals should some time prove themselves to be world beaters.

The photos are of two animals which will be offered at the McAlister-Morris sales in October.

The heifer looking right at you is Wiegertje Girl Pontiac, daughter of King Pontiac Topsy, one of the best sons of King of the Pontiacs. Picture taken at 11 months, weight at 12 months, 10 days, 880 pounds.

Other heifer, Abbie Segis Pontiac, also daughter of King Pontiac Topsy. Photo at 11 months, weight at 12 months, 10 days, 906 pounds.

See announcement on other page.

SCREW WORMS

Screw worms have caused an enormous loss to stockmen in the Southwest. All farm animals are affected by them and stockmen must ever be on the alert to reduce the loss to a minimum, says Dr. R. H. Williams, animal husbandman of the University of Arizona agricultural experiment station.

It is especially difficult to give animals on the open range the attention they should have. On this account stockmen have made a practice of treating everything they see whether it belongs to them or not. They further make a special effort to have an enclosed pasture where animals may be held conveniently and treated from time to time.

Stockmen should make a special effort to prevent the animals from becoming bruised or injured and when such an animal is found, a special repellent should be applied to keep away the adult flies. There are no good fly repellents that will keep away flies for more than a week. Common coal tar has been used to good advantage, but it soon dies and also has an objectionable feature of blistering the skin. A mixture of fish oil and tar made up in equal parts has good repelling qualities. Crysillie ointment two parts and chloroform one part, mixed thoroughly and applied as a paste, has also been used to advantage. Another good preparation is turpentine one part, pine tar three parts, and fish oil two parts, mix thoroughly and apply as a paste. It is claimed by some people that sprinkling the surface of a wound with cayenne pepper will keep flies away for about a week.

Where animals are found that are actually infested with screw worms, the first thing to do is to remove all maggots from the wound. A good preparation for this purpose is a 10 per cent solution of sheep dip, which should be sprinkled over the affected parts. This preparation will cause the screw worms to squirm out of the flesh and they may be brushed on to the ground. It is also wise to have a small pair of pliers that should be used to search through the diseased portion and remove the maggots. After all the maggots are removed, a good repellent should be used to keep the flies from depositing eggs. Any of the above preparations should prove efficient, but a mixture of three ounces of coal tar to one ounce of carbon disulphide will prove especially beneficial. This formula should be mixed thoroughly and kept well corked as it is both volatile and inflammable.

CAUSES OF ABORTION

Abortion may be accidental, caused by the cow's falling or getting injured by another cow. It may also be caused by feeding an unbalanced ration, or by feeding a ration which is exceptionally rich in protein, such as alfalfa hay. Alfalfa hay is very hard on the kidneys of animals, and as about 80 per cent of the waste matter from the body is passed through the kidneys, when too much of this element has been fed, the kidneys are unable to do all of their work. So when the cow is pregnant, the kidneys have increased work to carry off the waste material from the foetus, and, being unable to do this, the calf is poisoned by its own waste products and of course the cow aborts. Concerning contagious abortion, I wish to say that when a cow has aborted, she should be isolated from the other cows, and the place where she has stood should




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be thoroughly disinfected by using a five per cent solution of carbolic acid or one part of corrosive sublimate to 100 parts of water. The aborted calf or membrane should be destroyed by burying deeply or burning. The vagina and uterus should be washed out every day for a few days with a solution of corrosive sublimate—one part to 1000 parts of water is advisable—and the following precautions should be taken: Cleanliness; the free use of antiseptics; isolation of infected cows; precaution against breeding to infected bulls; and no cow that has aborted should breed until after three to six months. Sooner or later the disease seems to wear itself out and disappear from the herd, and some authorities claim that the animals become immune to abortion; but I wish to say that the financial loss to farmers is very great and also many cows after aborting are sterile. I should also like to recommend the following, not claiming it a sure cure for abortion; however it is a mixture which has given exceedingly good results in the Salt River Valley and other places:

Ten pounds sulphur, six pounds copperas, three pounds saltpetre, three pounds air slacked lime, one pound asafetida.

One pound of the above mixture is mixed with 10 pounds of salt and place where the animals can eat what they desire.—G. W. Barnes, Livestock Specialist in University of Arizona.



**Veterinary
Queries**

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Alfalfa Pasture for Calves

Is it bad practice to allow suckling calves to run on alfalfa pasture.—Subscriber, Daggett.

That depends on what you intend to do with the calves. If they are to grow up to be steers or cows then it is all right to let them run on pasture but if you are raising them for veal they will get fat quicker if kept tied up and only allowed to suck the cows twice a day.

Barley Beards

One of my mules has a sore neck caused by barley beards. It has been that way for two months. It broke and discharged considerable matter. What shall I do to cure it.—Subscriber, Daggett.

The opening should be made large enough so you can examine it and see that no barley beards or any thing else remains in the cavity. Then wash it out once a day with plenty of warm water to make the parts clean, and finish by wetting the inside of the cavity with a one per cent solution of permanganate of potash which you can get from your druggist.

Growth in Eye

I have a milch cow that has a peculiar lump in her left eye. Seems to be fast on the washer of the eyeball, about half way between the corners and on the lower side of the ball. Is about the size of a pea and is of a fleshy nature. She can draw it down behind the lower lid. The eye waters some. What can be done for it?—Subscriber, Kerman.

The growth may only be of the nature of a wart. Being on the eye of course it is very annoying. Get a small quantity of nitric acid from your druggist. Tie the cow's head up so she can not move around much. Press the eyelids away from the wart and rub some vaseline all round the wart. Then with a small swab dipped in the nitric acid just touch the wart a few times with the acid. You will need some help to do it carefully. Be sure that the acid does not touch any other parts and do not get it on your hands or clothes. It is very caustic. One treatment will probably be sufficient.

Cow in Heat While with Calf

My Holstein cow was served the 13th of December last and should be fresh this week. She was in heat about three weeks ago and again today. There are no signs of calving, although she has been developing udder and it has gained double in size in the last ten days. Is running in wild pasture where there is salt grass, Bermuda and other wild grasses. Is with five heifers not her calves. This will be her third calf and she never acted like this before. Is it common and what can be done for her?—Subscriber, Visalia.

Probably by this time the cow has her calf all right. The signs of her being in heat was a false alarm. It was probably one of the heifers that was in heat and the cow running after her made you think it was she and not the other. The fact that she was "making bag" is a good evidence that she was with calf and about to be fresh. If our diagnosis is not right please let us hear from you again.

Scar From Wire Cut

Have a five-year-old horse that was cut on a wire in the hock about a year ago. The cut healed as well as I expected but left a thick scar or crust where the cut was. He would be more valuable without that blemish and I would like to know if there is a remedy that will bring hair on that part.—Subscriber, Santa Maria.

You probably cannot get rid of all the scar. You may be able to reduce it some by applying the following ointment which your druggist can prepare for you: Tincture of iodine, two ounces; iodine crystals, one dram, and lard, four ounces. Mix and apply as directed. Scrape the surface to remove all the scabs and crust that you can and apply the ointment once a day.

Bloody Milk

Heifer fresh about two months with her first calf, has been giving over five gallons of milk from the first and is still giving it. Right hind quarter giving bloody milk for about two weeks and is getting worse. Some soreness. Good condition. Has all the alfalfa, green and dry, that she can

eat. Had another heavy milker that gave a little bloody milk for a while but recovered all right.—Subscriber, Waukena.

On account of her giving such a large flow of milk she is probably a heavy feeder and the strain on a young animal is too great. Reduce the feed. Give her a physic of one pound of Epsom salts and half a pound of common salt dissolved in two quarts of hot water. When cool give at one dose as a drench. Also give one ounce of chlorate of potash in the feed or drinking water once a day. Bathe the udder with water as hot as you can bare your hand in and milk her every eight hours until all soreness and blood have disappeared.

Rupture

I have a fine mare that became ruptured about a month before she had her colt. It swelled about as large as a water basin. I have blistered it twice and it did no good. Is there any cure for it? Will it hurt to work her?—Subscriber, Dehesa.

Rupture in large animals is practically incurable. Blister will do it no good. An operation would be the only remedy and the chances are that that would fail. Better get along with her the best you can as she is. Ordinary work will not hurt her.

Mange

I have a male, toy, black and tan terrier that has had the mange for several months. Have tried several different remedies but he still has sores and the hair does not come in but he does not scratch himself as much as before. I feed him bread and milk chiefly, but no meat. Will you please tell me what to do for him through the Cultivator.—Subscriber, Palmdale.

Am inclined to think the trouble is due to one kind of feed being continued too long. Give him one grain of calomel and repeat it in one week. Give him some raw beef. Get a bone with a little meat on it and let him earn it by gnawing it off the bone. If this does not relieve the trouble shortly then get a veterinarian to inject a canine vaccine that is now used for such cases.

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For Catalog Write

Jas. W. McAlister Jr., Chino
Sales Manager

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Auctioneer

Poultry for Profit

SELECTING THE LAYERS

Written for the California Cultivator
By Jean A. Koethen



GOOD deal is being said these days about the selection of the pullets that will be profitable layers and of the hens that have made good. A few years ago a hen was a hen. If she had shining plumage and a bright comb she had a right to live and to pose, if she chose, as the best of the bunch. War prices, alas, are putting an end to the pretensions of the farmyard belle, and we are asking sternly, "What has she done?"

The poultryman who uses a trapnest selects his layers without further trouble, but he will save himself some expense if he culls his pullets before they go into the laying houses. The many sideline and back-lot poultry keepers who do not find it convenient to use a trapnest must cull even more carefully in the beginning and must depend upon physical characteristics as indications of fecundity or the lack of it.

Culling the Pullets

In looking over my own pullets this summer I decided that every one that has not a fairly good comb at six months must go. My February pullets all had red combs at six months and were laying before seven months, but a few of the March pullets are slow in developing comb, and these I am marking for table poultry. This may seem drastic, but experience has satisfied me that an Orpington that is behind the average in developing comb will never come up to what is expected of her. The development of the comb goes hand in hand with the development of the organs of egg production, and the pullet that is slow in beginning to lay is rarely a high producer. There are exceptions, I know, but only enough of them to prove the rule.

If from six to seven months is the time for laying maturity with heavy breeds, as I believe it should be with fowls that are bred for eggs and not for show, what shall we say of Leghorns? I think we shall not go far wrong if we assume that a White Leghorn that is not laying at six months is probably not worth keeping, but I have had too little experience with them to be absolutely certain on this point. Many Leghorns do lay far earlier than this, and six months seems a reasonable age for any properly raised pullet to begin her life work. One of the best layers I ever had was a Rhode Island Red that laid her first egg the day she was six months old, and laid three days out of four as long as I was able to watch her.

Then there is the matter of size and shape. The best layers in a flock are not usually the largest hens, neither are they the undersized birds. Beware of the thin, "peaked" looking pullet. Beware too, of the short-backed bird. I believe a short back is considered no objection in a Wyandotte, but in most, if not all other breeds, the laying type is the long-backed type. I have my eye now on a pullet with a short back and almost a squirrel tail, and she is such a conspicuous contrast to her long-backed, deep-chested Orpington sisters that she must go to

market along with the pale-combed birds. A short back and a high tail do not go with the large abdomen and deep chest of the high producer.

The hen to which we look for eggs, no matter what her breed, is of a noticeable wedge shape, with the small end of the wedge in front; that is, she must be deep in the keel, but wide at the rear where the egg-organs are situated. She should also have a large, soft abdomen. The hen with a hard, firm abdomen is a table bird, not a layer.

It has been quite well established that the hen with a comb that is large for her breed is, other things being equal, the best layer, and I am glad to see in some of my March and April pullets conspicuously large combs. One of them has a head-piece so very large and ruffy I feel sure she will lay at least 200 eggs. Two years ago when I was sending most of my yearling hens to the butcher I selected almost entirely by size of comb, keeping only those with noticeably large combs. A remarkable increase in egg production in the next generation showed the wisdom of my selection. While it would not be safe to follow this rule absolutely, where no attention has been paid to size of comb in breeding, it is safe to say that the pullets which are late in developing comb should be thrown out and that those with large combs should be kept and watched.

Culling Yearling Hens

The yearling hens will be our breeders next spring, and it is of extreme importance that they be our very best.

I like the idea of selecting the breeder according to her time of molting. A hen can be forced to molt early if she is first deprived of food and then well fed on feather making food, but if this is done we lose one of the most valuable guides to her value. Beware of the hen that comes out in full fall costume in September. She may lay a few more eggs than the late molter, but they will probably be cheaper eggs. When I see a hen still ragged and faded in October, I know she is the hen for me. If, at Thanksgiving, she is still in her old clothes, her price goes up a big notch. The pullet that begins early in her first season is pretty sure to be the yearling hen that refuses to molt till the price of eggs begins to drop. I always feel a thrill of enthusiasm when I see a hen like that. She is worth a dozen of the late-beginning, early-quitting sort, and an inspiration to us lazy humans.

The latest scheme for selecting the breeder is that of selecting according to the color of her legs. One of the experiment stations began it; another took it up, and now it has been so generally exploited that it may be considered official. The idea, in simple words, is just this: that a good layer, if she has yellow legs lays the color out of them in a year, so that you may go through your flock the last of October and grade your layers by the shade of yellow in their legs. The color of the beak in the American breeds and of the ear lobes in White Leghorns is similarly affected. This

has been worked out in a number of large flocks, and found to be true in every case.

Now, this matter of color value looks very important at first sight, but it is really, as is apparent after a moment's reflection, just another way of saying that the late molter is the better layer. This selection according to color of legs and beaks and ear lobes can be done satisfactorily, it is averred, only in late October or November. At this time the early molters, which have had their rest, are beginning to show their original bright yellow color again, while the late molters, which are also the late layers, are still faded. In the case of fowls which have not yellow legs, I presume the same test would apply to the feathers, which are bright and glossy in the early molter and faded and dull in the hen that has been too busy to dress up.

Another principle of selection which has recently been formulated at the Missouri station is that of selecting according to rhythm or regularity of laying. Most hens lay with some sort of rhythm, three days and a skip, four days and a skip, or perhaps two and a skip. It does not require a great deal of intelligence to figure out that a hen that lays three days out of four is a better layer than one that lays two days out of three or every other day, and anyhow we need the trapnest for this sort of selection, and once we have the trapnest record nothing else matters. It is interesting to know that there is such a thing as rhythm in egg production. I always felt that there was some poetry in poultry culture.

In selecting next spring's breeders let us never for a minute, whatever fads we follow, lose sight of vigor as the foundation on which flock improvement rests. The late molter is almost certain to be a vigorous hen. So is the early layer. So is the hen that lays three days out of four, and the hen with a good appetite. I would as soon select a breeder by her appetite as any other way, if only she did not get too fat before breeding time came. Deep chests and good digestion, large abdomens and late molting go together, and we sum them all up in the one word vigor.—Jean A. Koethen.

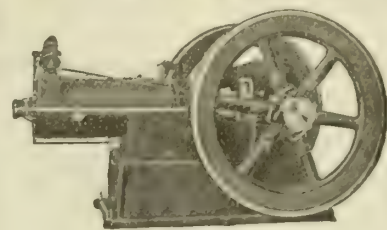
An idea generally prevails that when a hen begins she has a certain number of eggs to lay after which she becomes broody. This idea has been proven incorrect, as the production of eggs is like an endless chain, which continues according to the ability given the hen by nature, unless interrupted or broken by broodiness or some outside influence, such as change in weather, location, etc. Broodiness is a condition of the brain and not of the body, for at the time the hen becomes broody she is in a laying condition, having the different parts of the egg partially developed, but because of remaining on the nest, lack of exercise, loss of appetite and lack of nourishment the hen takes the egg material back into her own system and uses it as nourishment, just as hens do when a sudden change in weather stops them from laying.—Denver Field and Farm.

Observe the hens closely at feeding time and immediately remove any hen that shows signs of cold in the head, diarrhea, droppings bright emerald green, emaciation, very dark comb, or a desire to keep apart from the rest of the flock.

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Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoas, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Late Valencias, Navels, Marsh Seedless Grapefruit, positively first grown for Fall planting, 12½¢ in the tree row. Phone Whittier line 5544. Brunson Nursery Co., Santa Fe Springs, Cal.

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Machinery of Every Description Bought and sold—Buttress & McClellan, 205-207 N. Los Angeles street, Los Angeles. Broadway 8098; A5473.

POULTRY

Just Out—The Cultivator Poultry Book. "Poultry for Profit," by Jean A. Koethen. Published by the Cultivator Publishing Co. Highly endorsed by experts. Over 200 pages, 50 illustrations. Contains simple methods of avoiding and overcoming difficulties. A guide to poultry success under Western conditions. It tells what to do, why to do it, and how to do it. Nicely bound in cloth. Price \$1.00 postpaid, or with Cultivator one year, \$1.75. Send orders to Cultivator Publishing Co., 115-117 North Broadway, Los Angeles, Cal.

Baby Chicks—Orders booked now for Fall or Spring delivery. Get OUR vigorous little chicks NOW and be assured of a plentiful supply of eggs next Spring. Our breeds—White and Brown Leghorns, Black Minorcas, R. I. Reds, Barred Rocks. Write for circular. We also breed Flemish Giant rabbits, "the real giants." Campbell Poultry Ranch, Campbell, Calif.

Baby Chicks—Rhode Island Reds and White Leghorns. I guarantee safe arrival of a full count of strong, vigorous chicks. I can please you if you will give me your order. Fall chicks are easy to raise and do well. J. W. Lyon, Gardena, Calif.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 467 E. Third St., Los Angeles, Cal.

For Sale—Blue Andalusian Cockerels, \$2.50 and \$5.00, from my Chicago Prize Pen. Improve your flock with one of these fine Males. Write for folder and description. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

White Leghorn Cockerels of highest utility breeding. Order early. Breeding from our Cockerels will increase vigor and egg yield. Jos. E. Blackshaw, M.D., San Jacinto, Calif.

First-Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeye Hatchery, Turlock, Cal.

Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

For Sale—Thoroughbred Barred Plymouth Rock Cockerels ready for mating, \$3.00 each. W. E. Dietz, Corning, Calif.

Silver Spangled Hamburg Cockerels ready for mating. For sale. Eastern Blood. Tribble Nurseries, Elk Grove, Cal.

For Sale—White African Guineas. Mrs. B. Hocking, Guasti, Cal.

MISCELLANEOUS

We Will Pay You \$120.00 to distribute religious literature and take orders in your community. 60 days' work. Man or woman. Experience not required. Spare time may be used. INTERNATIONAL BIBLE PRESS, 936 Winston Building, Philadelphia.

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LIVE STOCK

I have another crop of seventy-five head of BIG TYPE POLAND CHINA BOARS, born in February, sired by IOWA WONDER, who is a son of A WONDER, the GREATEST POLAND CHINA BOAR, LIVING OR DEAD. IOWA WONDER is in the 1000-LB. CLASS. One of his sons from one of my good registered sows should make YOU MONEY. I will sell the best first. On account of being overstocked will sell them at \$20 each while they last, but they will not last long at this price, so ACT QUICK if you want an EXTRA GOOD BOAR FOR LITTLE MONEY. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight, with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Registered Poland Chinas—Large Type, sired by "Superbia," three times Grand Champion, 25 times first, out of Dams sired by 1st prize and Grand Champion Boar Idaho. Extra Choice boars, old enough for service and younger stock, both sexes. Satisfaction guaranteed. Prices reasonable. A. J. Robinson, Route 4, Modesto, Cal.

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Thoroughbred Poland China Boars of large type for sale. Buy at home and save express. Prices reasonable. For further particulars write to Maywood Colony Nursery, Corning, Cal.

For Sale—Registered Berkshires. 25 choice pigs of best breeding from the best strains in America. For prices and description address H. L. Murphy, Perkins, Sacramento Co., Cal.

Blue Ribbon Herd Duroc-Jersey Hogs, Service Boars and Bred Glits a specialty; also boar and two sows, not related. Meet me in S. F., 1915, prices. John P. Daggis, Modesto, California.

Thoroughbred Berkshire and Tamworth Hogs for Sale—Western Hog Company, formed by staff of Newmark Grain Co., Los Angeles. Ranch at Elsinore.

DUROC JERSEY BOARS
Trios of boar and sows not akin of the best blood lines at reasonable prices. Write me. L. L. DeYoung, Sheldon, Ia.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Poland Chinas—200 head fine individuals, weanlings to eight months. Satisfaction or money refunded. Geo. V. Beckman, Lodi, Cal.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Novato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

28 Springing Holstein Heifers and Registered Bull—fine milk strain. \$1500.00 takes them. E. H. Webb, Escondido, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Ricconi Bros., Mountain View, Cal.

Poland Chinas—Young stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

Glennview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Thoroughbred Duroc Jersey Boars and Glits, strong and vigorous stock. Fred Hart, Exeter, Cal.

Berkshires—Boar pigs for sale. Butte City Ranch, Butte City, Glenn Co., California.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

WANTED

Wanted—Orchard ranch to work or manage. Have made it a life work and study. You furnish equipment and I will do the rest. Have wife; no children. References furnished. Geo. H. Osgoodby, San Gabriel Ave., Azusa, Calif.

Wanted—Home in country for 10-year-old orphan boy. Is well trained, industrious, bright, strong and quiet. Needs a mother's and father's interest. Will adopt to right people. H. H. Eshelman, Soldiers' Home, Cal.

Wanted, good farm land in exchange for income property. J. H. Wood, 422 Van Nuys Bldg., Los Angeles, Cal.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

FARM LANDS FOR SALE

The owner of 3000 acres near Madera desires to subdivide for real settlers; the land is typical San Joaquin valley loam, free from alkali, and will grow anything; railroad crosses property and there is abundant water at shallow depth; the land is for sale at the right figure to people with proper qualifications; no cash payment down and terms to suit, provided the purchaser has sufficient money to put the land under water. Remember that there are no real estate commissions to pay to swell the price of the land; all the owner wishes is interest on his money. No real estate agents need apply. GREENE ESTATE COMPANY, 207-208 Berkeley Bank Building, Berkeley, Cal.

For Sale—Yucaipa valley, 9 miles east of Redlands, paved road, midst 3000 acres apple orchards; 7 19/100 acres fine apples, four years old in Spring; 3 room house with bath, garage, cement flume, cheap water, all kinds of berries and family fruits, only ¼ mile to school. Double your money in short time; cheap at \$5000.00. For further information address owner, A. E. Keller, R. F. D. 1, Box 33, Yucaipa, Cal.

Good Government Land relinquishment of 160 acres for the price of the improvements and work done; house, barn, fencing, fine climate, wood and water, \$650 cash. W. Wallace Baldy, Raymond, Madera Co., Cal.

For Sale or Exchange for acreage on electric carline, a beautiful acre laid out for family living, 20 minutes from Los Angeles, 17c fare, fine neighborhood, gas and electricity, good schools, \$3500 value. Mrs. Richey, R. 8, Box 557, Los Angeles.

State Map Showing School Land in different counties of the State, plainly marked, \$2.50. County sectional maps, showing vacant U. S. Land, plainly marked \$2.50 each. Order TODAY. Booklet, FREE. Joseph Clark, Sacramento.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

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SEEDS AND PLANTS

West Coast Seed House, Los Angeles, is offered for sale. A good growing business, central location, low rent, no debts. Will sell stock at less than cost, fixtures at a big discount, and nothing for the good will. Business established for years and has a good reputation. Also sell Poultry Supplies and manufacture Poultry Foods and proprietary articles that have a good sale. The name "West Coast" is well and favorably known. Stock inventoried July 1st at \$9332, but somewhat less now and can cut out some raw materials if not wanted. Would prefer selling as above for cash, but if you haven't all the money and can give good security, I will give time. Or will trade for good, well located land. I have other business that takes my time. T. S. Tompkins, 116 East 7th Street, Los Angeles, Cal.

Best, Cheapest Forage for poultry, cattle, hogs. Get our prices. Plant now. LUTHER BURBANK SPINELESS CACTUS PLANTATIONS, SAN DIMAS, CAL. Covina phone 902.

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs, \$8.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co., Cal.

Temary Beans for Sale—I have a limited amount I will sell for 6 cents. F. O. B. Redlands. Buy your seeds while they are cheap. Planting time this year they sold for 22 cents. A. B. Ward, Yucaipa, Cal.

Peruvian Alfalfa Seed—Halvy varieties, also Algerian wheat. S. P. Huss, Yuma, Arizona.

SCHOOLS AND COLLEGES

Wanted—About seventy-five young men and women to enter THE WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address, WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal. 634 E. Main St.

Telegraphy—Stenography, bookkeeping, English branches. Positions guaranteed. Mackay Business College, Los Angeles.

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GOATS

At Stud—Registered Saanen buck Cragvale No. 837, Hornless, from very heavy milking strain. Fee \$10.00. Phone, Garvanza 1141. L. I. Schinker, R. D. 1, Box 103, Los Angeles.

For Sale—Few Saanen grade bucks from large milkers, natural hornless. Apply 857 S. Spring, or Siemer Ranch, R. F. D. 11, Box 938, Los Angeles.

RABBITS

Caldwell's Royal Red New Zealand scored and sold on merit. Catalog free. Caldwell Bros., Box 613R, Los Angeles.

TURKEYS

For Sale—Turkeys—White Holland and Bourbon Red; also pair of Blue Slate Turkeys, prize winners. Mrs. B. Hocking, Guasti, Cal.

The Southern end of the state has been given considerable foggy weather and occasionally a "trace" of foggy weather has been reported.

POULTRY SHOWS

Riverside, Fourth Annual Poultry Show, Riverside District Poultry Association, Oct. 5-9, 1915, E. I. Hammond, secretary, Riverside.

San Jose, Santa Clara Valley Association, annual show, Oct. 6-9, 1915, Chas. R. Harker, San Jose, secretary.

San Francisco, Panama-Pacific Exposition, international poultry show, Nov. 18-28, 1915, D. O. Lively, Panama-Pacific Exposition grounds, secretary.

Redwood City, San Mateo County Poultry Association, Nov. 11-14, 1915, Fred West, Burlingame, secretary.

Phoenix, Arizona State Fair, Nov. 15-20, 1915.

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klussman, secretary.

Tucson, Arizona, State Poultry Association, Tucson, December 17-18.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Ontario-Upland Pigeon and Poultry Association, Ontario, San Bernardino County, January 27-29, 1916.

Seattle, Wash., King County Poultry Association, Jan. 10-15, 1916, C. W. Melville, 473 Colman Building, Seattle, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

ANOTHER WORD ABOUT THE SALES

Mr. McAlister writes regarding the two Holstein sales:

"There has probably never been such a favorable opportunity for cattle buyers as there is presented this fall at the different auction sales of pure bred cattle. On account of the financial depression and the large number of cattle to be sold prices are lower than they have been for several years, and the breeders have been compelled to part with cattle that in ordinary times they would not have sold for almost any price. In the Sacramento sale there will be a greater aggregation of cattle than has ever before been offered at any sale ever held before in the United States. This will include many A. R. O. cows, large milk record cows, large yearly milk and butter record cows and sons and daughters of large yearly record cows, and many splendid individuals; yet at the present prices that Holsteins are bringing it looks as if they will bring less than has been paid in the past for ordinary pure breeds. This condition will not last long, however, for the good Holstein cow will undoubtedly bring over 100 per cent more next year than she is selling for at the present time. The man with the ready money therefore has the chance of doubling his money. We wish to state, however, that even if the stock to be sold at Sacramento don't bring 25 cents on the dollar that every head will positively be sold and there will absolutely be no bidding or anything kept back out of the 175 head."

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Alfalfa in Walnut Orchard

Is it advisable to grow alfalfa in ten-year-old seedling walnut orchard, then to pasture it off with hogs? The soil is very sandy. Have a water lift of 80 feet.—Subscriber, Moorpark.

There is no objection to growing alfalfa in a walnut orchard, provided always that there is sufficient water used to keep the ground moist. This, however, is where the danger lies as the alfalfa will use a larger amount of water than is generally supposed and the trees suffer in consequence of the alfalfa taking the water the trees should have.

There is no economy in pasturing alfalfa, particularly with hogs as they will crop the alfalfa so closely that much of it will not survive. This makes a thin stand of alfalfa, leaving much of the soil unshaded and allowing rapid evaporation of the water which should be avoided where water has to be lifted 80 feet. A better plan will be to keep the soil well cultivated with sufficient irrigation during the summer to keep it moist all the time. Then as soon as the walnuts are gathered irrigate the orchard, plow and sow about 12 to 14 pounds of melilotus seed per acre. If the weather should be dry during the winter irrigate often enough to secure good growth and plow under before the green crop begins to harden. If there should not be plenty of moisture in the ground at the time of plowing it is best to irrigate just before plowing so as to secure a rapid decomposition of the green crop. Before buying seed of any kind it is best to secure samples and test for germination by taking 100 seeds, placing them on a plate and covering with several thicknesses of muslin, keeping damp four or five days. Then count the seeds which do not show signs of growth, and from this it can be determined what part of the seed will grow. It is much better to pay 12 cents per pound for melilotus seed which will all grow than to pay 6 cents for poor seed.—J. B. N.

Gum Disease

My peach and apricot trees, planted March, 1914, look as though something was wrong with them. They are completely covered with little drops of hard gum. The leaves are perforated with tiny holes. The branches are very thick and the trees had a little fruit on them this year. Please tell me if this condition is harmful and if so, what can I do to prevent it.—Subscriber, Alhambra.

This gumming is probably not a disease of itself but an indication of a disease or unfortunate physical condition. Even a close study of the tree may not develop the exact cause. It may be due to mechanical injury alone or to poor cultivation, or a waterlogged condition of the soil may induce it.

Red Spider

I send leaf with small spider. As you will note the tissue of the leaf is almost entirely destroyed. What is it and what is the remedy?—Subscriber, Alta Loma.

This is a serious infestation of the so-called red spider, *Bryobia pratensis*. It has been given attention by many experts in the effort to secure a remedy. Probably the best remedy is the lime sulphur spray mixed with flour paste. Mr. Volck recommends: "Commercial lime sulphur four gallons, flour paste four gallons, iron sulphate two pounds, the above to be mixed with 100 gallons of water. Mix the lime sulphur and the paste before adding the iron sulphate in solution." Spraying with atomic sulphur applied

at the rate of 10 pounds to 100 gallons of water has given excellent results.

Softening Water

Commenting on our reply to a query in the issue of September 16, Dr. R. R. Snowden, chemist, writes:

"I beg to advise that having had much experience along this line, I think tri-sodium phosphate is the best water softener for laundry use, because if an excess is used the cleansing properties of the water are enhanced. One to two tablespoons in the bath improves it by removing the lime and magnesia. Sodium fluoride is also fine, but is a little more ex-

pensive, and an excess adds nothing to the cleansing properties.

"I strongly advise against trying to soften water for drinking purposes unless done by a chemist."

Fruit Juices

There have been many requests for information as to preserving of cider, grape juice and other fruit juices. For all such inquiries we would recommend writing to the department of agriculture, Washington, D. C., and asking for bulletin No. 24, Studies on Fruit Juices, by H. C. Gore. It touches upon the general principles involved in extracting, filtering, sterilizing, containers, and, in fact, all features of fruit juice preservation.

Registering Pure Breds

Regarding the breeding of pure bred stock which it is desired to register, I note in the issue of September 9, Mr. Gow's answer to the inquirer regarding registering Jerseys that no matter how pure the blood if registry of ancestors has been lost there is no renewing the registry. My impression

is that inbreeding is necessary in order to secure registry.—Subscriber, Holtville.

We think our inquirer has an entirely erroneous idea as to the necessity of inbreeding. The maintenance of the pedigree is for the purpose of preserving a history of the ancestry of the stock and if the line is once broken of course there is no replacing it. Of course in order to perpetuate and increase certain qualities inbreeding is occasionally permitted, although more often line breeding is followed.

WE ALL DO IT

"They contemplate a trip to the Frisco exposition."

"That's cheap enough."

"What? Why, the fare—"

"I was speaking of the contemplation."—Philadelphia Public Ledger.

THEY HAD TO BE

Maud—"Don't you think there are just as good fish in the sea as ever were caught?"

Marie—"I don't know. But they are smarter, anyway."—Boston Transcript.



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—Just glance over this ad, and see how much we can actually save you on the few items mentioned. Remember our great big catalog is just brim full of such offerings. By all means send for it today. —Many of the things we offer here are not in our present catalog, as we cannot mention there the "special" purchases that we make during the season. So for the things advertised here—just sit right down and send in your order. It will be filled and shipped the same day. —Remember we pack all orders, except lumber, and put them on the cars, FREE.

Why Not Fix Up Your Roof Before the Rains Come?

—Right now, while the roof is dry from the summer, is the time to get it ready for winter. Note our prices and see what we can save you on new roofing, paint, etc.

Black Roof Paint, 45c and 60c

—Specially made under our direction for use on paper, felt and all flat or nearly flat roofing. Will make an old roof shed water like new. This price by the gal. in 5 gal. lots.

\$1.25 Black Graphite Roof Paint, 50c

—Nothing better for a shingle roof, fills up the cracks and pores. This price per gal., in 5 gal. lots. We've sold thousands of gallons of this paint and have yet to hear of it's not giving satisfaction.

\$1.25 Barn, Roof, or Fence Paint, 85c

—A specially prepared paint, made from a formula that has the benefit of 15 years' experience with the climate of the southwest. —May be had in either Green, Red or Gray, in 5 gal. lots at 85c per gal.

Shingle Stain, 50c

—Our own "Standard" brand, made from pure ground colors, all desired shades. Will hold its color longer than many of the higher priced stains.

House and Floor Paints, \$1.50

—This one item will prove to you that we do sell paints cheaper than any dealer in the West. Our tremendous volume of business makes this possible. All colors.

\$1.50 Air-Tight Stoves, 98c

—Made of best quality sheet steel, uniform color, flat top, heavy inside lining, steel draft, with nickel-plated steel screw damper disc. Heavy steel legs and pipe collar to fit 5-in. stove pipe.

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—This is a special 2-point light Star, weighing 50 pounds to spool of 80 rods. Our price per spool..... \$2.00

Heavy Glidded Barb Wire, \$2.55

—2-point galvanized barb wire, weighing about 73 pounds per spool of 80 rods. Our price..... \$2.55

Shovels at Wholesale Cost

—Now, today, is the time for you to do as hundreds have already done, and order a year's supply of these shovels.

—All kinds and sizes, all in perfect working condition but have been slightly smoked in a fire.

Long Handle, Round Point Shovels, per dozen..... \$4.85 or 50c each

Long Handle, Square Point Shovels, per dozen..... \$4.85 or 50c each

D Handle, Round Point Shovels, per dozen..... \$4.15 or 50c each

Long Handle Spades, per dozen..... \$3.75 or 40c each

Long Handle Scoops, per dozen..... \$3.75 or 40c each

D Handle Scoops, per dozen..... \$3.50 or 40c each

\$30 WALL BOARD, \$17.50

—Per 1000 sq. ft.—the finest quality—Cream white fiber board, the kind you usually pay \$30 a 1000 square feet for. It's all in A-1 condition, but we're overstocked on the 4 and 5-foot lengths, 48 inches wide, and to reduce the amount on hand are cutting the price to \$17.50 a thousand. Get your orders in early on this item.

\$15 to \$18 Front Doors \$10 Veneered Oak With Plate Glass Panel

—These are the doors that we secured specially some time ago, so they're not in the catalog.

—All standard sizes and styles. Finest quality oak veneer with plate glass panels at top.

\$1.75 Glass Door \$1.25

—Finely made doors with two lights of glass in upper half each glass has circle top and measures about 10 x 40 inches.

—Doors are of finest sugar pine and positively number one grade in every way.

Screen Doors 25% Off

—New screen doors, the overstock of a famous door factory, made of best selected sugar pine in standard stock sizes. These doors can be duplicated in any first class yard at 25% to 40% more.

Style No. 8, \$1.25

—Usually sells for \$1.65. Made of clear sugar pine, fitted with black screen wire at top, our price..... \$1.25

Style No. 9, \$1.40

—Sugar pine, with three lower panels and fitted with galvanized screen wire. A door that will stand lots

of use; our price..... \$1.40

"Standard" Roofing Paper

—A splendid quality of roofing that most firms would sell 20 to 40 per cent higher. Each roll complete with necessary cement, nails, etc., ready to lay. Send for FREE sample.

1-ply, double-sanded, per roll of 108 square feet..... \$1.15

2-ply, double-sanded, per roll of 108 square feet..... \$1.40

3-ply, double-sanded, per roll of 108 square feet..... \$1.65

1-ply, "King" smooth, per roll of 108 square feet..... \$1.25

2-ply, "King" smooth, per roll of 108 square feet..... \$1.50

3-ply, "King" smooth, per roll of 108 square feet..... \$1.75

This Special Steel Enameled Bath Tub \$8

—One of the greatest bargains we ever offered! Made of best galvanized 24 gauge steel. Outside is finished in a rich sky blue enamel with bronze trimmings and hardwood edge. Price only \$8.

—Other larger sizes at \$8.50, \$9 and \$10.

Low Down Enamel Steel \$11.50

Toilet Combination..... \$11.50

Complete to floor—wonderful value

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Closet Combination..... \$15.50

Special value—worth \$22.50.

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Toilet Combinations..... \$10.00

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All sizes— \$1.00

up from..... \$1.00

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Lavatories: every one

guaranteed— \$3.75

\$10 down to..... \$3.75

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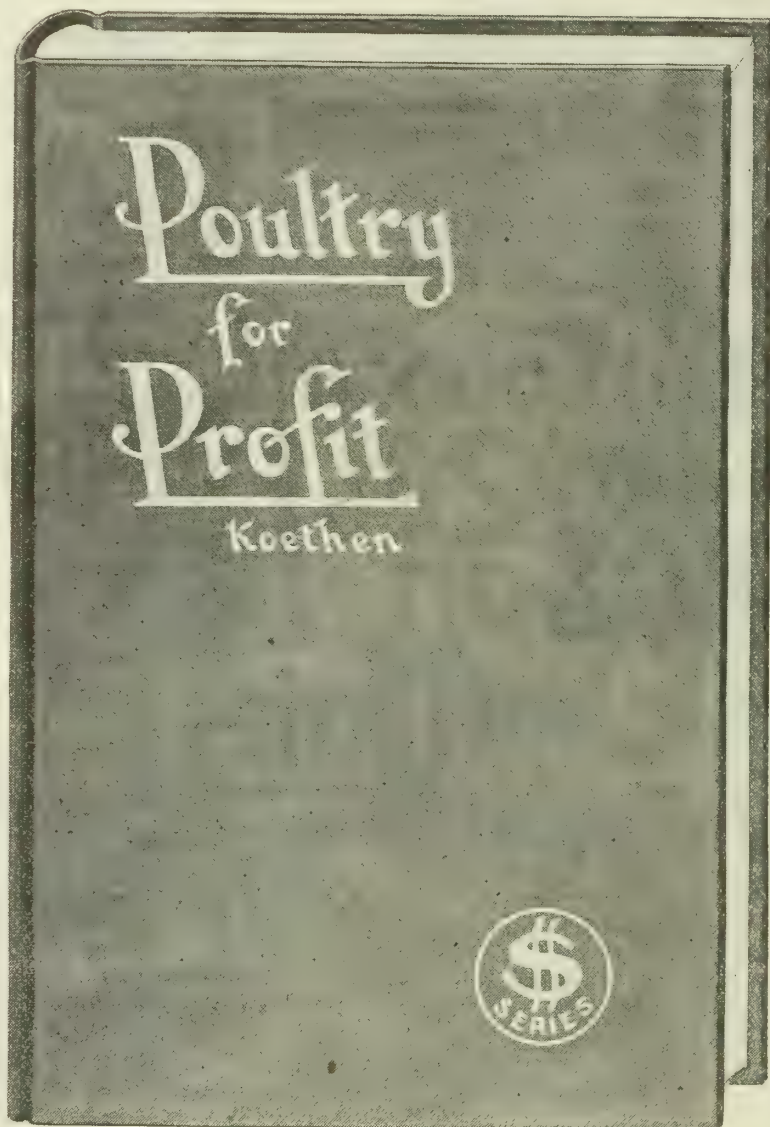
LOS ANGELES

Sanger Adv. Co.

the Cultivator Poultry Book

Poultry for Profit

by
Jean A. Koethen



PACIFIC POULTRYCRAFT SAYS:

A brand new book on poultry published by that old reliable Cultivator Publishing Co., Los Angeles. The author, Jean A. Koethen, has really written a poultry book worth while. The different subjects are treated with a directness that is refreshing, after reading so many books that say so much and mean so little. The book is intended for the beginner and farmer, but we commend it most heartily to anyone interested in poultry; whether for pleasure or profit; it is full of good things from cover to cover.

THE LOS ANGELES TIMES SAYS:

The author of this manual has covered the subject fully, giving the salient features and practices of an enlightened poultry culture as it applies to California conditions, based largely on personal experiences, and intelligent compilations from recognized authorities.

THE RIVERSIDE PRESS SAYS:

The Press is in receipt of a copy of this work, called "Poultry for Profit," and has no hesitation in commending it to either the "backlotter" who keeps a few chicks for his own pleasure, to the fancier who works to the "standard," and to the commercial poultryman who makes a business of poultry culture. Before its publication, the manuscript of "Poultry for Profit" was submitted to practical poultrymen, to experts and simple poultry enthusiasts, and all agreed that it was more comprehensive, more readable and vastly more helpful than any similar poultry book yet published. It covers the widest range, discussing breeds, feeds, diseases, housing, marketing and answers the thousand and one questions that even the expert poultryman sometimes has to ask and the amateur is ever asking.

THE PORTLAND OREGONIAN SAYS:

The Weekly Oregonian takes pleasure in recommending this book to its readers, for it is "the right stuff," told in the right way by the right woman.

"Poultry for Profit"

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

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Making a Beginning	Housing and Yarding	Incubation
Brooding	Feeding	Breeding
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Diseases and Vices	Ducks and Geese	Turkeys

The book is 5½x8 inches and contains 12 chapters, with over 225 pages of text and 18 pages of illustrations, printed on eggshell book, binding full cloth vellum de luxe, at the price of one dollar postpaid.

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The Cultivator Publishing Co., Inc.

115-117 N. Broadway

Los Angeles, Cal.



The Household Department



SEPTEMBER

The golden-rod is yellow;
The corn is turning brown;
The trees in apple orchards
With fruit are bending down.

The gentian's bluest fringes
Are curling in the sun;
In dusty pods the milkweed
Its hidden silk has spun.

The sedges flaunt their harvest,
In every meadow nook;
And asters by the brookside
Make asters in the brook.

From dewy lanes at morning
The grapes' sweet odors rise,
At noon the roads all flutter
With yellow butterflies.

By all these lovely tokens
September days are here,
With summer's best of weather,
And autumn's best of cheer.

—Helen Hunt Jackson.

THE DOLBERS' AGREEMENT

MARCH had been more than usually rainy, and Mrs. Dolber, picking her way across the muddy, sparsely grassed area, called a lawn by courtesy, wished in her heart that at least a part of the space might be concreted, thereby giving her a decent yard for the drying of clothes.

She rubbed her boots as clean as might be on the bedraggled mat at the back door, going in to dump the empty clothes-basket on the kitchen table.

Isom Dolber, clumping around in his stout leg-boots, hailed her as he entered:

"Well, where's dinner, Huld?" he demanded. "Think I can fool 'round here, waiting, when the spring plowing ain't half done? Guess if this place is to pay, I'll have to plow every inch and grow some sort of truck that I can sell. There's half an acre right at the back door—just waste, that's what it is!"

"But, Isom!" remonstrated his wife, hurrying the dinner onto the table, "where'm I going to dry the clothes? It's hard enough as 'tis—"

"Guess you can stand between the rows—cabbage, or beets, or potatoes. No use talking; I've got to make the farm pay," replied Isom, sitting down to dinner.

"It's dreadfully wet as 'tis, Isom, and in summer, if there's no grass it'll be dusty for the clothes. 'Course, they're not needing half an acre, but if there could be a bit of concrete for a drying yard—"

"I guess a pair of rubbers is a whole lot cheaper'n concrete. What's more, I tell you I want the ground for garden-truck, and I guess, Huld, if you'll 'tend to the house, I can take care of out-o'-doors."

Mrs. Dolber laid down her knife and fork, looking her husband full in the face. "Now, just you see here, Isom! I've heard about garden-truck till I'm clear sick and tired of it. Few years back we had a decent lawn and flowers like other folks. Then you said you couldn't be bothered with flower-beds, and the flowers had to go. You wouldn't get any grass-seed for the lawn, and it's pretty much all run to dandelions and sorrel and pepper-grass where it isn't worn clear down to gravel, 'count of walking back and forth over it, and never taking the trouble to water it, summers. Now here's where I quit!"

"Land o' compassion!" ejaculated Isom, looking at his wife in amazement. "What on earth do y' mean, Huld? 'Quit?'"

"Oh, I'm not planning for a divorce

—not yet!" responded Mrs. Dolber, sharply. "Guess as long's I've stood you all these years, Isom, I can go on standing you. When I say, 'quit,' I mean that I'm going to leave the outside of the house to you, seeing you say you can take care of out-o'-doors. Oh, yes; you can come into the house, 'course, Isom, and eat and sleep, and sit around evenings and read the paper and all that—but here I quit doing any outside chores. If you want all outdoors to yourself, you can have it—for all me!"

"Um!" responded Isom, stroking his beard. He got up from the table and took his hat. "Guess I'd better get back to that plowing."

Mrs. Dolber watched him plod away. "You're a good man, Isom," she murmured, "but there's some things you've got to learn, and the sooner you learn 'em, the better."

She washed and wiped the dinner dishes, and picking up the water-pail started mechanically for the door. As she was about to lift the latch, she halted. "Mebbe I've been back and forth to that well times enough, lugging water!" she muttered. "That's outdoor work, and I'll just leave it to Isom." Walking across the kitchen she peered into the wood-box. "Not overly much wood," she remarked meditatively, "but I guess it'll keep the fire going for the afternoon, though I don't know about supper. Well, wood's in the shed, and the shed's quite a piece from the back door. That's Isom's chore, all right!"

After a long, comfortable survey of the kitchen, cheerful in the western light, she walked over to an inviting rocking-chair that stood at the pleasantest window.

"There's the whole afternoon for sewing—just sewing!" she exulted under her breath. "Not mending—mending isn't really sewing, it's just—mending. I do love to get my needle into something new!"

Her gaze wandered out of the window to the weekly washing on the clothes-line; she half started from her chair only to drop back again peacefully. "There's another outdoor chore for Isom, when he's through plowing!" she chuckled. "Mebbe the clothes'll get bone-dry, hanging out so long, but I don't mind giving 'em an extra sprinkling."

Mrs. Dolber certainly enjoyed the long, quiet afternoon as her needle went in and out, producing tucks and ruffles too dainty for her sewing-machine that stood aloof in one corner.

"You're all right," observed Mrs. Dolber, nodding towards the machine, "when it comes to long seams or even straight hems or wide tucks, but I guess I'd best do these tucks by hand, seeing's I've plenty of time."

"Cut-cut-cut-cut-dah-cut!" came up from the henhouse, down by the barn. Mrs. Dolber laid down her needle, listening.

"Declare if 't isn't 'most time to feed those hens!" she murmured, "and there's the eggs, too—Oh, I forgot!" She picked up her work again, sewing busily.

The shadows were growing long when Isom opened the back door and trudged into the kitchen, plumping down into the first available chair.

"Tell you what it is, Huld," he panted, "this plowing certainly does take holt of me; but, my, what an appetite I've got! Hope you're going to have a first-rate supper."

Mrs. Dolber smiled placidly at her husband from her rocking chair. "I'm calculating to get you the best sort of supper, Isom, and plenty of it, but I'm clean out of firewood and the water pail's 'most empty. You'll have to bring in some wood and water, Isom, 'fore I can get supper, and you'd better look up some eggs, too, when you're feeding the hens, and—"

"My stars, Huld!" broke in her husband. "You ain't meaning—?"

"That's all outdoor work, I take it, Isom. You said if I'd 'tend to the

house you'd take care of out-of-doors, and I said I'd quit, and you could have it just as you said. That's the agreement, Isom, and I'm sure I'm willing and anxious to keep my part of it, so please hurry right along with the wood and water and eggs."

Isom set his lips grimly, marching to the door with the air of a man who is too proud not to accept the situation.

"Oh, Isom!" his wife called after him, as the door swung wide. "There's the week's washing on the line; you'd better get that in while you're about it; there'll be plenty of time before supper's ready. Here's the clothes basket."

No one could have called the supper that Mrs. Dolber set forth that evening anything but a success. The huge omelet with fragrant and abundant shavings of delicate pink ham amid its inner mysteries; the hot biscuit, cream-colored between the melting browns of the upper and under crusts; tea of deep amber; jelly that sparkled and gleamed and quivered, yielding up the very essence of the fruit from which it had been made; cake, moist without heaviness and sweet without stickiness—all of these, set forth invitingly, challenged Isom to make good his claim to an excellent appetite.

"Why, Isom!" exclaimed Mrs. Dolber, as her husband pushed back his chair after a very moderate meal. "There's nothing the matter with you, is there? You said you had such an appetite—"

"Supper's first-rate, Huldy," declared Isom, with a slightly confused air. "Guess mebbe, I've eaten enough, though. Fact is, I've a kind of hankering for bed. Might 's well go there, I guess, soon's I've done the chores."

"Well—mebbe you had, Isom," replied his wife in kindly tones. She sat for a while, busied with her knitting, after the thud of his stockinged feet in the room overhead had ceased. "I—I'd know as I'd any business to act so!" she murmured, reluctantly. "And he takes it like a lamb, too!" she muttered almost remorsefully, driving the cat down cellar and blowing out the lamp.

Waking at the usual hour in the morning, Mrs. Dolber's first conscious sensation was one of chagrin. "Declare I never thought of it!" she muttered. "Isom always built the fire mornings, and now I've got to do it!" Rousing herself a little more, she glanced about her. "Well, I never!" she ejaculated. "If Isom isn't up already!—Count of having all the outside chores to do, I s'pose."

Dressing hurriedly, she went down into the kitchen. The fire was crackling bravely in the cook stove; the table, even, had been drawn out into the middle of the floor, the cloth laid and the dishes set out upon it—man fashion, to be sure, and in need of more or less rearrangement; nevertheless, there they were.

Something rose up in Mrs. Dolber's throat, and her eyes grew misty. "And me driving him around yesterday as if he was a slave!" she murmured, remorsefully.

She hurried to the kitchen window and looked out on the debatable half acre. There was no sign of any plow; only Isom on his knees cutting away at the sparse turf, while a heap of sods were piled at his side.

Disregarding preparations for breakfast, Mrs. Dolber hurried out to her husband. "It—it was real clever of you to make the fire and—set the table, Isom," she murmured shyly. "Neither of 'em was yours to do, 'cording to agreement, and—"

"I guess, Huldy," replied her husband, turning slowly towards her, "that the agreement you're telling about don't stand. There's a good deal bigger agreement that goes clear back to the time I put that ring on your finger, and there's nothing in that agreement 'bout dividing up duties nor rights, but just sharing 'em. Leastways, that's the way I sense it, come to think it over."

Mrs. Dolber drew a long breath. "You—you're taking off the sod before plowing, Isom?" she asked with apparent irrelevance. "Now, I should think—"

"Well—yes!" interrupted Isom, slowly. "I am kind o' taking off the sod, Huldy. But I ain't calculating to plow this half acre; I can scrape along without it. I'm kind o' planning to concrete a piece of it near

the back door, where it'll be handy for drying clothes, and mebbe I'll take some more off, here an' there in spots, so's we can have some flower beds, like you was telling about yesterday, and water laid in the kitchen, I guess, and a hose for watering 'em."

Mrs. Dolber gasped. "Water laid on? And a hose?—Oh, Isom!" her breath came short and quick.

"There, Huldy, there! It's all right! Guess we'd best go in and have breakfast. No, Huldy!" he went on, in answer to the smile that drew up the corners of Mrs. Dolber's mouth and made her eyes twinkle. "I ain't going to carry the sharing so far's to try to cook the breakfast, 'cause when it comes to cooking—and a whole lot of other things, too, Huldy!—you're surely clear 'way ahead o' me!"—Successful Farming.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Warm Baked Pears
Bacon and Egg Omelet
Cream Griddle Cakes—Honey
Coffee

Lunch or Supper

Vegetable Chowder
Baked Rice, Spinach with Bacon
Raisin Gingerbread—Crabapple Butter
Tea or Milk

Dinner

Boiled Ham, Sweet Potatoes Southern
Creamed Tomatoes Corn Bread
Chocolate Cake Fresh Fruit
Coffee

Cream Griddle Cakes

To one cup of buttermilk add a pinch of soda, one-half teaspoon of salt, one teaspoon of sugar and flour for a thick batter. Beat until smooth, then thin to the desired consistency with sweet cream. Lastly add a teaspoon of baking powder and bake at once on a hot griddle.

Crabapple Butter

Select well ripened crabapples, cut them up without coring or peeling them and place them in a graniteware kettle with enough water to cover them. Boil them slowly until they fall to pieces; then press them through a graniteware colander. Add the pulp to the water in which the crabapples were cooked, and for each quart of pulp add half a pint of pineapple juice. Also add enough sugar to sweeten the butter, and allow the mixture to simmer until thick. Then boil, stirring it constantly, until it is perfectly smooth; if it becomes too thick in the meantime, add a little more pineapple juice. Seal in glass jars while boiling hot.

Boiled Ham

Boiled ham, to be at its best, requires very slow cooking. Put the ham in a kettle, cover it with cold water and let it soak four hours. Take out, wash thoroughly, scrape and clean off the hard edges of skin. Put back in the kettle, cover with cold water and let simmer until the meat is tender when tried with a fork. A ten-pound ham will require about five hours cooking in this way. Remove from the fire and let stand in the water for an hour, then take from the water and remove the outside skin. Sprinkle the ham with granulated sugar and cracker crumbs, a dash of paprika and insert two or three whole cloves. Put in a slow oven and bake for one hour.

Chocolate Cake

Take a cup of brown sugar, add a half cup of sour cream, a half teaspoon of soda, one egg well beaten, a cup and a half of flour sifted with a teaspoon of baking powder. Dissolve two squares of chocolate in half a cup of boiling water and add to the cake the last thing. Flavor with vanilla and bake in two layers or in a small loaf.

HOUSEHOLD QUERIES

Candied Figs

Please give recipe for transparent candied figs similar to those sold in Christmas boxes. My formula has been to dip in boiling water until the fruit turns yellow, then drain. I cook two cups of sugar and one of water until it threads and cook the figs in

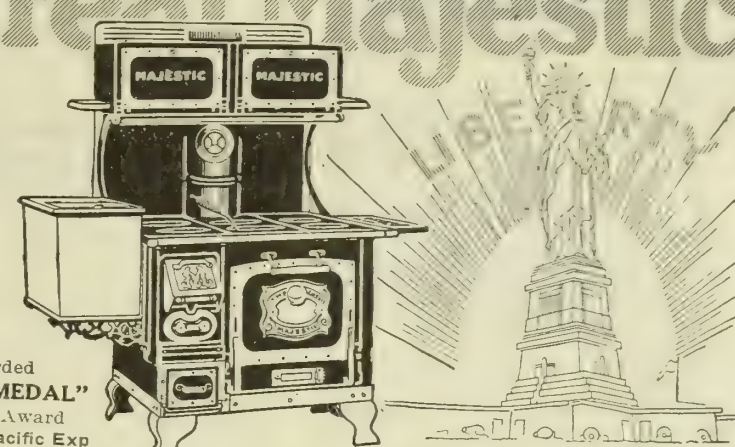
this for ten minutes, then drain on platter, repeating the process each day for eight days, but the figs shrivel up and turn dark about the fourth or fifth day. Can you tell me where I can get a book of recipes for candying all kinds of fruits?—Subscriber, San Gabriel.

Possibly you have dipped the figs too often, the heat from the boiling syrup causing them to shrivel. The following recipe for candied figs appeared in the Cultivator of July 23, 1914: Use figs not yet fully ripe. Place in glass jars, pour on salt water and steam until soft. Pour off the salt water and pour over the fruit a syrup made of one cup of sugar to three of water. After a day take out, place on wire screens and allow to drip for one or two days in a warm

place. Place again in jars or earthenware, cover with a syrup made of one cup of sugar to one and one-half cups of water and leave for one day. Then take out and allow to drain, after which cover with a syrup made of one cup of sugar to one-half cup of water. Allow the figs to remain in this as long as possible, or until required. Take out, drain and roll in confectioner's powdered sugar in a pan made lukewarm. Pack away in boxes in powdered sugar.

Recipes for the candying of fruit are given in Marian Harland's "Complete Cook Book;" also, we believe, in the "Encyclopedia of Cooking," by Cassell. These may be obtained at your bookstore.

Great Majestic



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A Majestic means freedom from baking failures; freedom from fuel and food waste, freedom from frequent repairs—freedom from the expense and annoyance of the ordinary range or cook stove.

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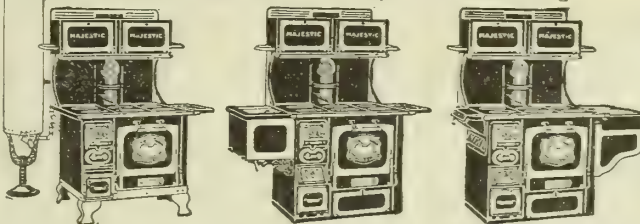
The Majestic is made of non-breakable, malleable iron and charcoal iron that resists

rust three times longer than steel. The oven is kept tight, permanently, by cold riveting (not bolted or clamped)—no cracks to be putted. The heat is held in, and maintained, with less fuel.

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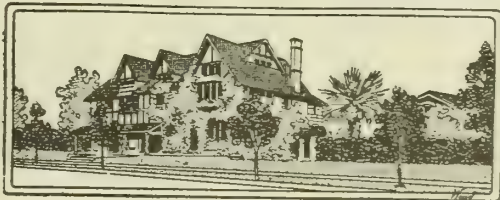
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Martha C. Weaver, A.M.
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1500 South Figueroa St.
Los Angeles, Cal.



San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, Sept. 22, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
Arizona Longhorn17@17½
California Fresh14
Cheddar20@21
Domestic Swiss20
Eastern Daisy18½
Imported Swiss40
Longhorn17@17½
Oregon Triplets14½@16
Tillamook15½@16

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts.....34
Candled36@38
Northern Fresh Extras, f. o. b. S. F. 39½
Other Outside Stock.....33

Prices to producers:

Hens, lb.12@16
Roosters, old9
Broilers, lb.20
Fryers16
Roasters, lb.16
Turkeys16@18
Ducks13
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.....7.25
Prime Steers7¼@7½
Helfers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lb.2
Merced2.00
Northern Burbanks1.20@1.25
Shimas1.35@1.40

ONIONS

Wholesale selling price:
Pickling, lug1.25
Brown, cwt.1.10
White Globe, lug75
Garlic12
Sets, White and Brown, lb.10

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz. ...1.00@1.10
Beets, doz.30
Beans—
Wax7@7½
Limas5@6
Green7@7½
Cabbage, sack70@75
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.75
Chicory, doz.40
Chives, doz.1.00
Corn, lug55@60
Cucumbers, lug40@45
Pickling, lug1.00@1.50
Egg Plant, lb.3@3½
Escarole, doz.40
Horseradish, lb.15
Leeks, doz.40
Lettuce, doz.30
Mint, doz.40
Okra, lb.4@5
Onions, Green, bunch.....20
Oyster Plant, doz.....40
Parsnips, doz.....35
Peas, Telephone6@6½
Peppers—
Chili, Green3@3½
Bells3½@4
Pimientos6
Rhubarb—
Crimson Winter, box.....75
Strawberry75@85
Spinach, doz.20
Squash—
Crookneck, box40
Hubbard, lb.1½@2
Summer, lug40@45
Tomatoes—
Lug45@50
Turnips40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower95@1.00
Jonathans2.00@2.25
Pearmain, Red90@95
King Davids2.00
Crabapples, box1.35
Bananas, lb.4
Berries—
Strawberries, basket5@10
Blackberries, basket5@6
Raspberries, basket10@14
Cantaloupes—
Paul Rose, crate.....1.15@1.25
Columbia, large crate.....1.50
Pineapple, crate1.25
Casabas, crate1.50

Figs—
Black65@75
Grapes—
Black Hamburg, lug.....70@75
Malagas, lug80@85
Morocco1.25
Muscats, lug65
Concord, crate1.10
Tokay, lug1.00
Guavas, lb.6
Peaches—
Clings, box50@60
Freestones, lug50@60
Elbertas, lb.1½@2
Pears, Bartlett, box.....1.25@1.75
Prunes, Italian and German.....1.25
Pineapples, lb.4½@5½
Quinces, lug45@50
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons1.25@1.75
Juice Lemons75
Grapefruit, Seedless4.00
Limes, basket1.00
Valencias4.50@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes.7½@8½
Apricots8½@9½
Peaches5@7
Pears, lb.11
Prunes, fancy pack.....7½@12½

NUTS

Prices named by California Walnut Growers' Association are:

No. 116½
Budded Walnuts20
Jumbos19
No. 212
Culls9
Almonds, New—
I X L16@16½
N. P. U.16@16½
Drake, Thin Shell.....18@18½
Peanuts—
California, Raw6
Japan5½@6
Eastern7@7½
Chinese5

HONEY

Wholesale selling price:
Comb, Fancy, Water White.....16
White15
Extracted Water White.....8½
White22@23
Light Amber6
Beeswax25

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Limas5.35
Lady Washington5.25
Pinks4.50
Black Eyes4.50
Lentils12.50
Small White5.00
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:
Barley Hay12.00@14.00
Wheat Hay10.00@13.00
Tame Oat12.00@16.00
Alfalfa10.50@13.00
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.20
Corn, White2.30
Wheat2.00@2.05
Oats, White1.80
Oats, Hulled2.25
Egyptian Corn2.10
Kaoliangs1.60
Barley Seed1.55
Barley, Hulled1.90
Kafir1.85
Milo1.75
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles.

Bran, Heavy1.70
Alfalfa Mea1.15
Alfalfa Molasses, per cwt.....1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.....2.25
Cracked Wheat, cwt.....2.15
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal.....2.50
Fish Meal3.15@3.25
Rolled Barley1.50
Rolled Oats1.85
Middlings2.00
O. & W. Middlings.....1.80
Feed Meal2.30
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Poultry Mash, 90-lb. sk.....1.90@2.00

San Francisco Market

SAN FRANCISCO, Sept. 21, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh, Extras26
Prime Firsts24½
Firsts24

CHEESE

Wholesaler to retailer.
Young America11½@13½
California Flats13@14
New York Cheddar.....19
Oregon Twins13
Oregon Young America, fancy.....14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh, Extras39
Select Pullets32½
Hens, lb.13@17
Fryers22@23
Broilers23@28
Roosters—
Young20@22
Old8@10
Squabs2.00@3.00
Turkeys17@24
Ducks12@15
Geese11@15

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Helfers3@5½
Calves, lb., live wt.6@9
Hogs4@7¼
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7@7¼

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.....1.25@1.65
Delta Burbanks, cwt.....50@1.00
Sweets1.50@2.00

ONIONS

Wholesale selling price:
Onions, cwt.40@60
Garlic6@8

VEGETABLES

Wholesale selling price:
Beans—
String, lb.1@2
Limas, lb.2@3
Wax, lb.2@3
Celery, doz.25@30
Corn, sack75@1.75
Cucumbers, lug20@35
Eggplant, lug30@60
Okra, lug30@40
Peppers—
Bell, box30@50
Chili, Mexican, lug.....30@45
Tomatoes, lug35@65

FRESH FRUIT

Wholesale selling price:

Apples—
Alexanders75@1.00
Bellflower60@90
Gravenstein70@1.10
Bananas, Hawaiian, bunch.....75@1.25
Blackberries, chest3.00@4.25
Cantaloupes—
Delta, lugs45@75
Turlock Ponies50@60
Turlock Standard65@70
Figs, box, single layer, black.....30@50
White40@50
Grapes—
Black40@65
Thompson Seedless, crate.....70@85
Tokay, crate45@60
Muscat, crate65@75
Muskmelons, box75@1.00
Huckleberries, lb.4@7
Nectarines, Red, crate.....50@75
Peaches, wrapped25@75
Pears, Bartlett1.25@1.45
Lug1.40@1.85
Lake County, wrapped.....1.35@1.75
Pineapples, doz.1.25@1.75
Plums, crate65@80
Prunes, crate1.00@1.25
Quinces, box50@75
Raspberries, chest4.50@8.00
Strawberries, chest3.00@4.00
Watermelons, doz.1.00@2.50

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50@3.50
Lemons1.50@2.75
Lemonettes1.25@1.75
Limes, Mex., cs.4.00@5.00
Valencias3.50@4.25

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼c. All outside sections ¼c lower.
Other Fruits, Stand-Choice Extra
50-lb. boxes ard. Choice Choice Fancy
Apricots6¾c 7¾c 8¾c 9 c
Peaches3¼c 3½c 3¾c 4¼c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6¼c; do, 12-oz., 5c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5c; bulk, 5¾c; Thompson seedless, No. 1, 16-oz., 7¼c; 12-oz., 6¼c; 50-lb. cs., 6½c@6¾c; Sultanas, 16-oz., 7¼c; 12-oz., 5¾c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Walnuts cleaned up. Prices on new stock not yet made.
Almonds: The association quotes as follows: Nonpareil, 15c; I X L, 13½c; Ne Plus Ultra, 13c; Drakes, 11c; Languedocs, 11c. Outside dealers are asking 1½@2c per lb. above association prices.

Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.90@4.95
Pink3.75@3.90
Black Eyes3.25@3.50
Cranberry4.15@4.25
Small White4.75@4.85
Garbanzos3.50@3.75
Large White4.50@4.60
Bayou4.50@4.60
Manchurian Speckled Bayous.....4.00@4.25
Red Mexican4.75@5.00
Red Kidney6.00@6.25
Horse Beans2.00@2.25

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new10
Extracted White6½@7½
Light Amber3½@4½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley13@14
Sonoma-Mendocino14@15
Oregon-Washington15@16

HAY

Under date of September 18, 1915, Scott, Magner & Miller say:
Receipts for the past week were 3688 tons, the previous week 4047 tons and the week preceding that 5311 tons. The natural inference from decreased receipts is that fields are becoming cleared rapidly and we believe that within the next two weeks receipts will drop off materially. Usually we can figure hay from the fields for at least 45 days longer, but this year gives every evidence of the fields being cleared by the end of this month. The market is firm on all grades; even the poorer grades doing better than heretofore. An advance is noted in choice grades. All receipts have moved off readily.
The receipts have consisted mostly of medium and poorer grades, very little choice hay of either variety having been

WEATHER CONDITIONS

For the Week Ending September 18, 1915.

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

Temperature Data

	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Eureka	.02	.28	.71	66	48
Red Bluff	.00	T	.25	94	54
Sacramento	.00	.01	.15	94	52
San Francisco	.00	.01	.02	80	52
San Jose	.00	.04	.17	88	46
Fresno	.00	T	.00	96	52
Independence	.00	.08	.00	88	42
San Luis Obispo	.00	.01	.14	98	48
Los Angeles	.00	.00	.00	82	56
San Diego	.00	T	.00	72	52

in evidence and whenever offered has sold readily at top quotations. Not only is it generally conceded that our own crop is decidedly short but we are in receipt of advices from a prominent Southern California dealer and quote him as follows: "Grain hay situation in Southern California will be the shortest crop for several years." This, together with reports from Seattle, Washington, of a similar nature only goes to confirm our belief of higher prices during the winter and spring months for our own crop.

Alfalfa from the river districts finds ready market and is selling at top quotations. Interior hay will not be sought for until the river districts are cleaned up. Straw continues to lag and very little interest is shown in this commodity.

Fancy Wheat Hay (11 bales).....14.50@16.00
No. 1 Wheat or Wheat and Oat.....12.00@14.00
No. 2 Wheat or Wheat and Oat.....8.50@11.00
Choice Tame Oat.....12.00@13.50
Other Tame Oat.....9.00@11.00
Wild Oat.....7.00@10.00
Alfalfa.....10.00@13.00
Stock Hay.....6.00@7.00
No. 1 Barley Straw.....25@40

GRAIN

Alfalfa Seed.....16 1/2
Wheat, Cal. Club.....1.52@1.55
Blue Stem.....1.65@1.67 1/2
Barley Feed.....1.15@1.20
Shipping and Brewing.....1.20@1.22 1/2
Corn, Eastern Yellow.....1.77@1.79
Oats, Red, Feed.....1.30@1.32 1/2
Oats, White, Feed.....1.35@1.37 1/2
Oats, Black, Feed.....1.90@2.00
Millet.....2 1/2 @ 3 1/4
Rape.....2 1/2
Flaxseed.....3 @ 5 1/2
Rye.....2.00@2.25

FEED STUFF

Wholesale prices:
Alfalfa Meal, car lots.....15.00@16.00
Bran, ton.....26.00@27.00
Feed Cornmeal.....42.00@42.50
Cracked Corn.....42.00@42.50
Rolled Barley, ton.....25.00@26.00
Middlings.....32.00@34.00
Shorts.....26.00@27.00
Oilcake Meal.....37.50@39.00
Cocoanut Oilcake Meal.....23.00@24.00

Citrus Fruit Market

LOS ANGELES, CAL., Sept. 22, 1915.

The orange market continues strong. Present conditions almost assure good prices until the end of the citrus year, which is October 31st. There are not more than 1200 or 1300 cars. This amount will be readily absorbed by the market.

The lemon market is making a belated effort to redeem itself; this because of a streak of hot weather which has been given to nearly all sections of the East. The shipments are, however, being held down and it is to be hoped that the good prices which are now being obtained will prevail for some months.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 31,887, lemons 6345, total 38,232. To same date last year, oranges 36,586, lemons 2707, total 39,293. From Tulare County and Central California points, oranges 5649, lemons 202, total 5851; to same date last year, oranges 5875, lemons 302, total 6177. Butte and other Northern California points, oranges 630, lemons 2; last year to same date, oranges 404, lemons 5.

NEW YORK, Sept. 20.—Thirteen cars Valencias, five cars lemons sold. The market is strong on both oranges and lemons. Weather fair.

VALENCIAS—
Old Mission, xf, Chapman.....\$6.20
Old Mission, fy, Chapman.....6.00
Golden Eagle, Chapman.....5.50
Lady Rowena, Chapman.....3.45

ALPHA COMBINATION POWER SPRAYER



CONSTANT HIGH PRESSURE is easily maintained with the ALPHA AUTOMATIC PRESSURE CONTROLLER.

When desired pressure is reached the pump automatically ceases operation. The engine idles. Again resuming operation when pressure drops below point at which it is set.

Does away with need of relief valves, diaphragms, etc., which are soon put out of commission by the corrosive action of the spray material.

Just what you are looking for.

Send for Catalog 3-A.

De Laval Dairy Supply Co.
SAN FRANCISCO SEATTLE
Everything for the Dairy.

Anahelm Supreme, S. T. Ex.....6.40
Mother Colony, S. T. Ex.....4.90
Atlas, Or. Ex.....5.80
Hector, Or. Ex.....5.45
Alphabetical, Or. Ex.....5.60
Ticktock, Or. Ex.....5.10
Geyser, O. K. Ex.....5.20
Flyer, O. K. Ex.....4.30
Paul Neyron, S. A. Ex.....5.05
VALENCIAS—Halves—
Red C.....1.95
LEMONS—
Las Fuentes, ventilated.....2.65
Montecito Valley, ventilated.....2.10
Pet.....2.85
Greyhound.....2.40
Setter.....2.25
Palm Tree.....1.55
Commercial.....1.40
Dan Patch.....2.60
Pony.....2.05
Rough Diamond, ventilated.....2.60

BOSTON, Sept. 20.—Ten cars sold. Market is strong on oranges and lemons.
VALENCIAS—
Mars, Amer. Ft. Dis.....\$4.60
Jupiter, Amer. Ft. Dis.....4.35
Autumn Leaf.....3.90
Modjeska, Anaheim O. G. A.....4.60
Crafton Special, R. H. Ex.....4.00
Majesty, O. K. Ex.....3.75
Owl, O. K. Ex.....2.95
Echo, S. T. Ex.....4.85
Arroyo, S. T. Ex.....4.45
Mother Colony, S. T. Ex.....5.10
LEMONS—
Squirrel, A. H. Ex.....\$4.00
Prairie Chicken.....3.20
Coyote, O. K. Ex......55
Homer, Q. C. Ex.....3.50
Camel.....2.95
GRAPEFRUIT—Halves—
Rialto Brownie.....\$1.80

CINCINNATI, Sept. 20.—Three cars sold. Market is strong on oranges and lemons.
VALENCIAS—
Partridge.....\$3.90
Red Ridinghood, S. D. Ex.....5.05
Hesperides, S. D. Ex.....4.75
LEMONS—
Alamo, F. C. Ex.....\$2.20
Oriole.....1.75

PHILADELPHIA, Sept. 20.—Four cars sold. Market is strong on oranges and lemons.
VALENCIAS—
Martha Washington, Or. Ex.....\$5.15
Cowboy, Or. Ex.....4.85
Alphabetical, Or. Ex.....5.15
Ticktock, Or. Ex.....4.85
Banana Belt, Or. Ex.....3.20
Tree, Or. Ex.....3.00
Caledonia, Placentia M. O. A.....4.00
LEMONS—
Pet, S. D. Ex.....\$2.60
Greyhound.....2.30

PITTSBURGH, Sept. 20.—Five cars sold. Market is strong.
VALENCIAS—
Crackshot, Sparr Ft. Co.....\$3.20
Del Oro, Sparr Ft. Co.....3.30
Real, S. T. Ex.....3.40
LEMONS—
Red Shield, A. C. G. Ex.....2.70
Green Crown.....2.05
Alamo, F. C. Ex.....2.40
Oriole.....2.00

CLEVELAND, Sept. 20.—Three cars sold. Market strong on oranges; weak on lemons.
VALENCIAS—
Trail, A. C. G. Ex.....\$5.30
Canyon.....4.40
LEMONS—
N. W. B. Loma, V. C. Ex.....\$2.35
Homer, Q. C. Ex.....3.40
Camel.....2.95

ST. LOUIS, Sept. 20.—Three cars sold. Market easier on oranges; steady on lemons.
VALENCIAS—
Progressive, Or. Ex.....\$3.30
Searchlight.....4.70
S. S.....4.25
LEMONS—
Homer, Q. C. Ex.....\$2.25
Camel.....1.90
Coyote, O. K. Ex.....1.80

CHICAGO, Sept. 20.—The market is flooded with peaches, much of the Michigan stock being soft and marred by specks. Twenty boxes California Elbertas and clings sold at 50@65; Washington, Utah and Colorado Elbertas at 40@50. Plums, cases, 4 baskets, Giants, Gross, Hungarian and Kelsey, 1.10@1.25; Diamond, Italian and Silver Egg, 85@1.00; Grapes, cases, 4 baskets, Tokay, 1.50@1.75; seedless, 1.15@1.25; Malaga, 1.00@1.25; Niagara Whites, 75. Casabas, California, cases, 1.10. Cantaloupes, standard cases, California, 2.50@3.00; Colorado, 1.00@2.00; pony crates, California, 1.75; flat cases, white meats, 1.00@1.25. Pears, boxes, 50 pounds, Bartlett, California, 2.00@2.50; Washington, 1.75@2.25; barrel stock, De Anjou, Duchess and Clairgeau, 2.00@2.75. Oranges higher, boxes, California Valencias, 5.00@5.50; choice but off sizes, 4.50@5.00. Lemons, boxes, California, depending on size, 2.25@3.00. Grapefruit, boxes, 36 to 64 count, 3.50@5.00.

A WARM INVITATION

The Supreme Court of Illinois, in *Aulger vs. the People of Illinois*, 34 Ill., 486, held that the following was not a challenge to fight a duel, but seemed rather to invite one:

"Sir: It appears that a wife is your favorite of settling fuses and if so bea the case you can consider that it will suite me you are a Coward and darsent to except of my offer. iwant the same chance of sharpening mi wife you can set your day and I will be on hans. . . . come uplike a man chuse your man an I will chuse mine this thing must be settled iam not a coward."—Chicago Tribune.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Responsibility for Stock in Pasture

Last March I placed 19 heifers in pasture upon the inducement of the pasture owner who promised to look after the stock, count and water the same and report any illness. Three months later I visited the pasture and found no water and my stock suffering, which I referred to the owner and he promised to see that that would not occur again. On the 13th day of August I removed stock, at which time all the stock in the pasture were bellowing around an empty water trough; my heifers were thin and had lost from \$10 to \$15 per head. Is the owner of the pasture liable for the condition of my stock?—Subscriber, Lindsay.

An agistor or keeper of another's stock is required to exercise in any event reasonable care and diligence and he is liable for any loss or injury where there is want of such care upon his part, whereas in this instance the agistor has been negligent in caring for the animals, especially after an express agreement upon his part, is clearly responsible for the loss which you have suffered.

Homesteading Right Lost

When one has only had a homestead of 160 acres, is it possible for them to take another 160 acres? My husband had 160 acre homestead and after proving upon same sold it. Now could he or I take another homestead?—Subscriber, Santa Maria.

Any person who prior to 1911 made entry under the homestead or desert land acts but who has subsequently lost, forfeited or abandoned the same shall be entitled to the benefits of the entry laws as though the former entry had not been made, but any person applying for a second entry must furnish a description and date of the former entry. The provisions of the act do not apply to any person whose former entry was cancelled for fraud or who relinquished his former entry for valuable consideration in excess of filing fees paid for him upon the original entry.

Homesteading Requirements

If I file on a homestead and fail to locate on the land within six months do I lose the right I gained by filing? Can another party file on the same land after six months, without contesting my rights?—Subscriber, Devore.

If at any time after filing the first affidavit and before the expiration of the tree-year period it is proved to the register of the land office after notice to the settler that the entry man has failed to establish residence within six months at any time, then the land shall revert to the government, provided, however, that a commissioner of the general land office may allow the settler twelve months from the date of filing within which to commence residence.

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The Dressing That's Different

Make that faded auto top and upholstery like new. WATER-TITE is a flexible, rubberized, waterproof dressing that will not rub off. DRIES IN 10 MINUTES. Waterproofs mohair tops and gives that silky lustre of newness. Just as good for buggy tops, trunks, straps, etc.

\$1.00 per pint. Postpaid
(Sufficient for 2 applications to the upholstery of a touring car)

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200,000 customers testify that my designers and factories build quality into them. Built for long, hard, continuous users' satisfaction. HIGHEST QUALITY—LOWEST PRICES. About 1-3 to 1-2 less than you usually pay. Don't buy till you get my catalog of these and other farm and household goods free. A postal note to Wm. Gallows Co., Box B, Waterloo, Ia.

Increase the Efficiency of your Farm Equipment—by Buying this \$585 Tractor and Portable Engine!—

F. O. B. MINNEAPOLIS, MINN.

The modern farm is a "food factory," which must be conducted on the same efficiency basis which rules in all other big industries. Make your farm more PROFITABLE. Cut down the work you have to do. Sell most of your horses, save the expense of their upkeep, not to mention the investment—let a couple of your hired men go—buy a Big Bull Farm Tractor and put your land investment ON A SOUND BUSINESS BASIS.

Big Bull is a powerful lightweight Tractor,

built especially to do ALL traction work on the farm. Big Bull is making money for farmers in all sections of the country—6500 Big Bull Tractors in use today. Put this economical power machine on your farm and let it do ALL the work. Big Bull does ALL your plowing, discing, seeding—runs manure spreaders, pulls hay loaders, mowers, binders—runs pumps, feed grinders, small shredders and threshers. Big Bull acts as an ever ready PORTABLE engine, saws wood, runs your cream separator, etc.

"BIG BULL"

Produces 20 Horsepower at the Belt. 7 Horsepower at Drawbar

Why not buy a "Big Bull" NOW and increase the productiveness of your soil 100% by DRY PLOWING IT? Extreme heat makes the use of horses impossible. It never affects "Big Bull."

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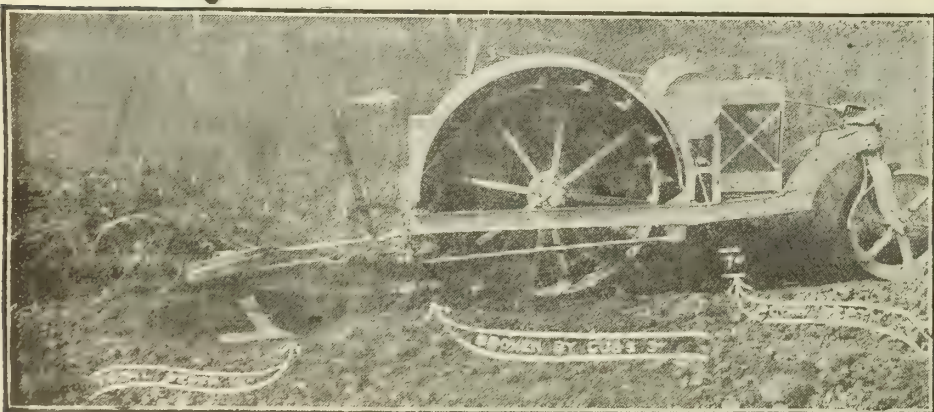
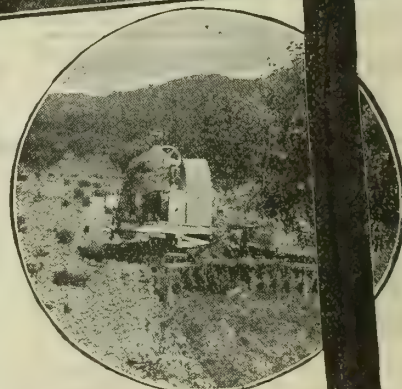


Photo at the left shows BIG BULL pulling two 14-inch plows and a sub-soiler at Eugene, Oregon. Note Bull wheel lugs breaking hardpan in furrow.

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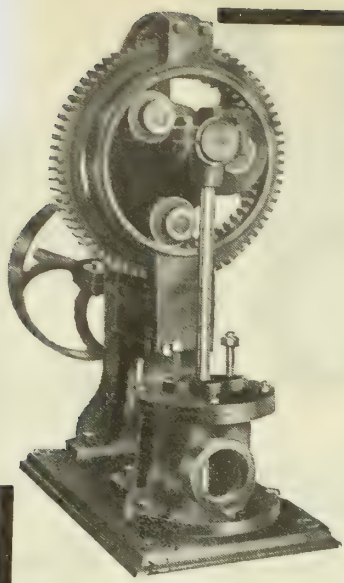
September 30, 1915

SAN FRANCISCO



Two California Beauties

IN THIS ISSUE: Rural Credits Conference, San Francisco; Address of Myron T. Herrick; Walnut Prices



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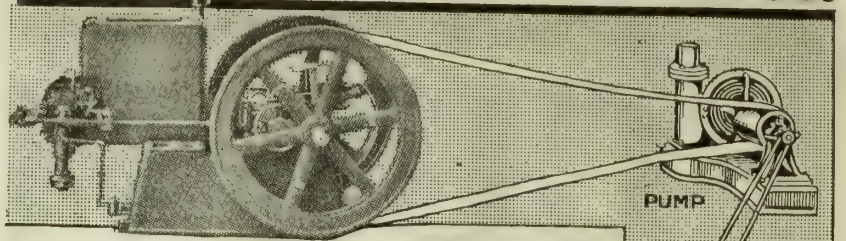


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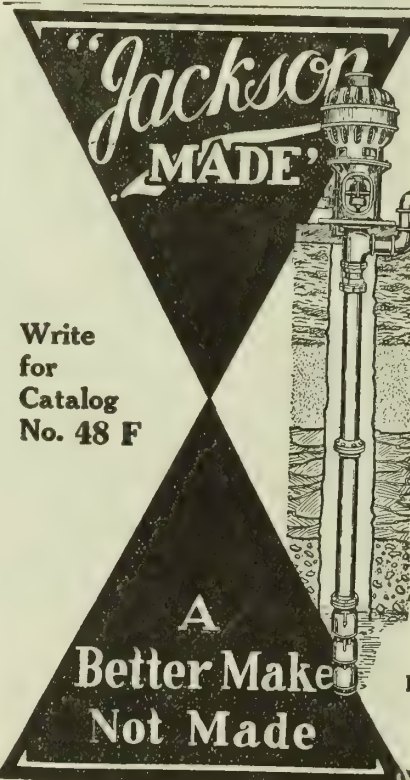
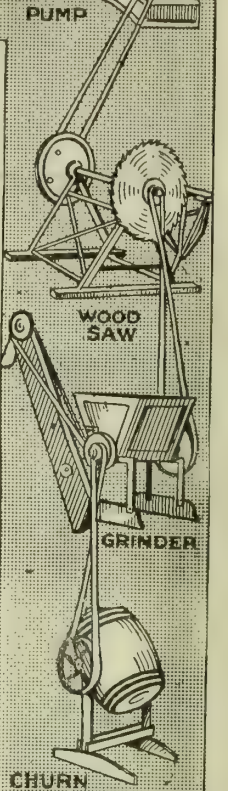
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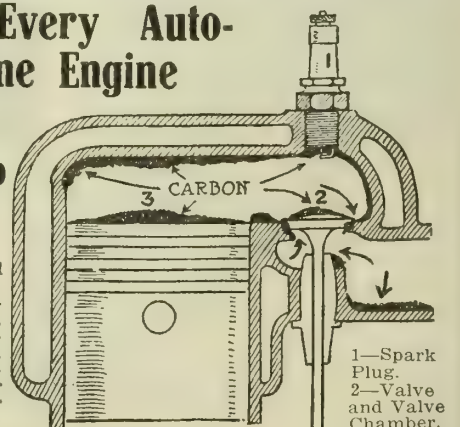
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Vol. XLV No. 14

LOS ANGELES: THURSDAY, SEPTEMBER 30, 1915

One Dollar Yearly

Rural Credits Day of Irrigation Congress

Discussion at the San Francisco Session of the International Congress of Irrigators.

Written for Cultivator Readers by R. P. Dougherty

TUESDAY, September 21, was Rural Credits Conference Day at the P. P. I. E. There was a mass meeting at Festival Hall, presided over by Hon. Chester P. Rowell, editor of the Republican, and a member of the commission appointed by Governor Johnson last winter to study proposed legislation on rural credits. Addresses were made by Myron T. Herrick, formerly our ambassador to France, by Prof. Elwood Mead of our state university, recently in the service of the government of Australia, by Senator James D. Phelan of San Francisco, by James Madison, manager of the California Raisin Growers' Association, and by Colonel E. J. Watson, president of the Southern Cotton Congress and the National Drainage Commission. In the evening a round table conference was held to discuss the points made by the speakers of the afternoon and consider future action of those interested in the rural credits movement.

A committee was appointed by Chairman Rowell to report at the round table conference on methods of centralizing and organizing a national rural credits movement. This committee consisted of Prof. Elwood Mead, Mortimer Fleischacker, C. E. Wooster and C. E. Crunsky.

The Land Credit System

Former Ambassador Herrick was the first speaker. His address was given in part in the Cultivator of last week and is continued in this issue.

Throughout his address he advocated the landschaft system, based on land credit. "The landschaft banks in Belgium, in France and in Germany," he said, "are practically self-sustaining because they have adopted the scheme of financing their land as other business is financed. Cooperative organizations are not benevolent institutions for helping the down and out; they only help him who is able and willing to help himself. Cooperation is the quickest way to success for the humble as well as the high, but its liberal interpretation is mutual self help; it requires ability both to give and receive. It will succeed best among those who ask no favors and rely upon their own ability, toil and resources. State aid would be as harmful as it is unnecessary."

Rural Credits in Australia

Dr. Mead spoke of the operation of rural credits in Australia, giving especial attention to the system as worked out in the state of Victoria. He said:

"The island continent of Australia is of about the same size as the United States, settled by emigrants from Great Britain, largely English and Scotch, having the same language, the same social and political ideals and the same tendency toward independence and individual action. So far as

its natural advantages are concerned they are in no wise superior to ours. Australia is separated from its markets by seven to twelve thousand miles of ocean and suffers from the disadvantages of a light and variable rainfall. In many ways it is comparable to the western third of the United States. During the first half century agricultural progress was slow; it did not keep pace with the United States. Then came the event that cut the economic history of Australia like a knife. This was the passage by New Zealand of a rural credit law regarded by the conservative English and Scotch as exceedingly dangerous. Now the six Australian states all have in operation rural credit systems; interest rates to the farmer have come down to about half what they are now in the United States. With the opportunity for long time, amortized loans, much gain has been made in agriculture; farmers are able to buy better stock and better tools; they are able to build better houses and better schools. Taking the 20 years preceding and the 20 years following the adoption of the rural credits systems they have led all countries of the world in increase of production and in increase of exportation.

"All six states have the same fundamental system. In Victoria the rural credits are handled by a state savings bank. It has behind it the government guarantee but its management is entirely apart from political influence. So efficient has been its management that 735,000 out of a population of a million and a half are depositors and it has a fund of \$20,000,000. "The system adopted is that of the credit foncier of France. Loans are made at 5 per cent with annual amortized payments of 1½ per cent on 30 years' time.

"For several years rural credits in Australia were confined to meeting the needs of already well-to-do people, the men who were able to give first mortgage security; those who owned property and wanted money to improve it. But there was another class in the young and undeveloped country which needed assistance, the men who had no farms and wanted to buy them and who, for the welfare of the state should be assisted to buy, sons of farmers, tenant farmers and city men who wanted to become farmers.

The first step was the purchase of estates where already there was demand for land, usually by the sons of well-to-do farmers. To handle this a "Closer Settlement Board" was formed with power to purchase lands and sell to settlers on the easy, long-time payments already outlined. Out of the 20,000 acres of land so purchased over a half million has now passed into the hands of owners.

"The most significant feature in the agriculture of Australia is the develop-

ment of its irrigation systems. When I went to Australia they were losing \$2000 a day. The land holding averaged 600 acres; there were not enough people to cultivate them; there was no market for the water. The state (Victoria) determined to undertake an investigation of other irrigation systems and sent the minister of lands and myself to Europe. There we found the great feudal estates in Italy, which had been almost depopulated, being transformed into prosperous ranches. There the people had no land; they had to have the money to acquire land. In Denmark one-sixth of the farmers are aided in buying directly by the state. In Ireland it is not the cooperative associations that will transform that country but the \$40,000,000 furnished by the British government to buy lands and build houses. Germany in Poland, where conditions are like those of the western third of the United States did not employ the landschaft system but the state aid policy of Australia.

"The state of Victoria decided that it was essential that the settler should have a living income the first year, that he should have money to build a house, to level and prepare his land and then it stood ready to make loans on improvements made with his own capital to tide him over the three or four difficult years.

"Not from the beginning has there been any question of the success of this plan. It has created a scientific agriculture. 40 acres today is as much as ten times that under the old plan. And the whole thing has been done without expense to the taxpayers.

"What do we do for the settlers on our irrigated lands? Let me describe two instances:

"Three years ago there came to Australia from the Imperial Valley a man with a capital of \$600. He was a man of character and experience. The state gave to him the same opportunities it gives to all. It sold him 50 acres at \$80 an acre, including a house. He made the customary payment of 3 per cent. The state leveled his land and seeded it to alfalfa. Within a month he was living in a comfortable house and his farm was in condition to bring him in an income. It was ready for sheep pasture. Then a commercial bank financed him in buying the sheep. The first year he made \$1000 after making payments on his land and water to the state. The next year he made \$2000.

"At the same time another man came to Nevada from Wisconsin. He got 80 acres for nothing. With him he brought \$2000, three times the capital of the man going to Australia. He spent \$300 for a house, \$100 for a stable, \$100 on fencing; bought a team; then began without any aid or direction the unfamiliar work of leveling the land. At the end of a year

he had 50 acres leveled, no crop, no money, no credit and nowhere to turn for assistance. He had to leave his farm and go to work for wages.

"Too many systems of rural credit stop with the man who has his land and credit. There can be no successful credit system for the man who has not acquired land unless it has behind it the state credit and the state's management and direction."

Proposed Legislation

Senator Phelan outlined the movements already made toward rural credit legislation in California and by the federal government. He spoke of the commission appointed by Governor Johnson to gather information to present before the next session of the state legislature and of the federal commission which visited Europe to perform the same service for the federal congress. As our three principal parties stand pledged to rural credit legislation, the speaker stated that it appeared reasonable to suppose that some legislation of this kind will be put through by the next congress.

Senator Phelan said: "The town man gets money at two or three per cent and gives short time paper. But the principle of all rural credit legislation is long time paper. In Denmark the farmer pays five per cent interest and may have 30 or 40 years to pay for his land. The government must be used to bring about this condition; no banker could foresee the condition of the money market 30 or 40 years hence. The banker is in the business of making money; he is not a philanthropist. It is the duty of the state to put men on the land and maintain them in reasonable prosperity."

Cooperative Marketing

Mr. Madison asserted in most positive terms that "it is of no value to put a man on the land unless he has some working capital; that is where most farmers meet their Waterloo. He needs money for a short time and needs it badly; his crop practically all matures at one time; he has to sell it and take what he can get. The only way to do it until he gets a working capital is through cooperation.

"The raisin association is formed on fundamentally right principles, that is, of having a working capital. Two years ago raisins sold at two cents a pound because everybody had to sell at the same time; since the organization of the association the growers get approximately four cents. Saving the state of California this \$6,000,000 will keep more farmers on their farms than any rural credit you can establish. The money will be used in other and kindred enterprises, making the farmers prosperous, and at reasonable prices, not exorbitant. The raisin consumer pays less while the producer has dou-

(Continued on Page 322)

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Frictional Loss in Feet for 100 Feet Clean Iron Pipes

Table of Theoretical Horse Power Required to Raise Water at Different Heights

Convenient Equivalents

How to Make a Weir

How to Determine Mesh of Strainer to Use

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COVER CROP

L

AST year considerable concern was felt as the war was involving practically all Europe and activities were carried on to a great extent directly in the countries and sections from which the seedmen of the United States have been accustomed to draw their leguminous seeds for cover crop purposes.

With thousands of acres of crops destroyed and practically all able help taken from the fields, European countries were unable to export enough cover crop seed such as vetches, clover and lupines to supply the demands of the American growers even to a slight degree.

The growers of citrus and other fruits in California have progressed with their industry and in consequence have long since come to the conclusion that cover crops constitute an economical means of protection for their soils during the winter months as well as a supply of plant food when once plowed under. Burr clover and another clover only recently used for this purpose, Melilotus Indica or yellow blossom sweet clover, are both adapted to our climatic and soil conditions. The citrus experiment station at Riverside has been growing the clover for the past five years, comparing it with other cover crop seeds. It was generally conceded that Melilotus Indica would save the situation. Those who grew it during 1914-15 were favorably impressed.

It is an exceedingly deep root plant. Its nature is to establish its rooting system first. After coming through the surface the plant stands at a height of five or six inches for possibly eight weeks. It sends its long tap roots straight down meantime and penetrates the plow-sole that might exist from shallow cultivation and renders the subsoil thoroughly porous. This porosity enables the water to penetrate.

The plant is a splendid producer. The tonnage obtained in a grove depends largely of course upon the actual area planted. For instance an older grove leaves less planting space than does a young grove. But taken as an average it has been found that 10 to 15 tons of green material is obtained. This means an equivalent of at least three tons of dry mulching material. Taking into consideration the cost of the seed, it makes by far one of the most economical cover crops we have.

The adaptability of melilotus to the various climatic and soil conditions is an important factor. Melilotus Indica grows right through the cold season, not being retarded at any time during the winter. Soils vary from a sand to heavy adobe in different sections and still every place that the clover has been planted it has produced.

The citrus experiment station at Riverside has recently issued a valuable pamphlet on Melilotus Indica, written by Mr. W. M. Mertz, field superintendant, in which is given the details of experiments covering a period of five years.

The best time for sowing is sometime before October 15, but not earlier

than September 1. The seed may be drilled in or sown broadcast, as equally satisfactory results are usually the returns. Sow at the rate of 10 to 12 pounds per acre when drilling and 25 to 35 when broadcasting. Bear in mind that the seed must be sown shallow, not to exceed one quarter of an inch at the most. In the older groves say 20 to 25 years old only 12 or 15 pounds of seed will be required.—Harry R. Mitchell.

FORTY-SEVENTH STATE CONVENTION

The Forty-seventh State Fruit Growers' Convention will convene at Visalia, Tulare County, November 18th and 19th.

Tulare County, though one of the first fruit-growing counties of California, has never been favored with one of the fruit growers' conventions.

There has been a loud call for thorough discussion of marketing, insect control, cover crops and mulching, control of scale insects, and leaf hoppers. Each of these topics will be led by authorities and given considerable time on the program. The County Commissioners will hold a meeting at same time.—A. J. Cook, State Commissioner of Horticulture.

CULTIVATION IN FLORIDA

We have from Mr. Henry A. Marks of Winter Haven, Florida, a photograph taken from his veranda looking down between rows of his orange grove, showing an ideal condition as to soil tillage. Mr. Marks writes that clean cultivation of the soil is kept up from February until about the middle of June when the rainy season begins. We take it that after that native growth is allowed over the surface, and we doubt not that is the reason Californians as a rule have the idea that Florida cultural conditions are materially different from those which prevail in California.



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Guarantee

"We warrant all trees and plants to be good, thrifty and true to label, but having no control over them after delivery to the transportation companies, or over the planting and care after they are received by the buyer, we will not be responsible in any other direction than as stated, and accordingly, if any tree or plant should prove untrue to kind, we will either replace same or refund the amount paid; but in no case will we be liable for any sum greater than the amount originally charged, and this statement is due notice to buyers of the extent of our responsibility for trees and plants after delivery and acceptance by the buyers."

Does the above statement appearing only in nursery catalogues exempt a nursery from liability where trees prove untrue to name? Does it effect the purchaser where the statement has not been read by the purchaser? What is the value or purpose of such a clause?—Subscriber, Santa Ana.

In sales of seeds, plants, trees and other merchandise of that character there are the following warranties implied by law:

First, One who sells or agrees to sell goods by sample warrants the bulk to be equal to the sample.

Second, That one who, knowing the buyer relies upon his advice or judgment, sells personal property warrants to the buyer that neither the seller nor his agent, employed by him, knows the existence of any fact concerning the thing sold, which would to his knowledge destroy the buyer's inducement to buy.

Third, One who sells merchandise inaccessible to the examination of the buyer warrants that it is sound and merchantable.

Outside of the above warranties any warranty relied upon by the purchaser or any limitation of the warranty relied upon by the seller must be in the contract of sale; that of course does not mean a formal written contract document, as a contract may be made up from different letters or circulars, but in all such instances in order that nurserymen would be entitled to rely upon the limitation it is the opinion of the writer that it is necessary for the nurserymen to show that such limitation of the warranties implied by law is actually brought

home to the knowledge of the purchaser prior to purchase. It is easy to be seen that a mere replacement of the tree, which perhaps would not prove its kind for three or four years would be but a poor relief. With the most careful nurserymen the above clauses are frequently used, but they are placed not merely in catalogues, but upon the different parcels sent out from the store or nursery; in that case the buyer is of course put upon his notice that he can either take the goods upon the basis on which the nurseryman is willing to sell them or if that is not satisfactory, he can do business with other parties, but such nurserymen make every effort to bring home to the buyer precisely the terms of the contract, which they are willing to make and a different question is present than in the case of nurserymen who merely place a notice in their catalogue, which may not come to the attention of the buyer.

We may add that all nurserymen feel compelled to use these forms of guarantees for the reason that orchardists are so negligent in their planting operations that it's a necessary protection. However, we have known of cases when a mistake has been made—and not entirely in the nursery—and yet the nurseryman has made good to the entire satisfaction of the planter.—Ed.

Separate Property of Man and Wife

What is the separate property of man or wife acquired before or after marriage, and are profits of same separate property?—Subscriber, Pomona.

All property owned before marriage and that acquired afterwards by gift, bequest, devise or descent, together with the rents, issues and profits of such property so acquired is the separate property of a wife, the same rules define separate property of the husband.

Trust Deed as Security

When a trust deed is given on a piece of property to secure a note, what is the usual procedure followed to foreclose when the note becomes due? Will the property have to be advertised and sold to the highest bidder or can the person holding said note take over property without notice?—Subscriber, Sherman.

It is almost invariably the case that a trust deed provides that a demand shall be made upon the maker of the note for payment and that thereafter a notice of sale of property shall be published for such period as is designated by the trust deed in a newspaper published within the county, within which the real property is located, which notice gives a description of the property and of the parties to the trust deed and mentions the date when the sale will take place. On the date advertised the property is sold to the highest bidder and there is no equity of redemption on trust deed sale.

Mortgage, Chattel Mortgage, Etc.

What is the difference between a mortgage and a chattel mortgage or deed? If a place is sold to settle an estate with the heirs, have the heirs a year to redeem it back in?—Subscriber, Bachelor.

A mortgage is a contract by which specified property is hypothecated for the performance of an act without the necessity of the change of possession. The word "mortgage" standing alone usually has reference to a lien upon real property, whereas the words "chattel mortgage" refer to a lien upon personal property. A deed in the common acceptance of the term, usually means an instrument whereby real property is transferred. In case of a sale of real property under partition proceedings in the superior court, a purchaser of the property upon confirmation of the purchase by the court acquires absolute title to the property. The year of redemption applies only to sales of real property under execution.

Public Securing Right to Road

I own 320 acres, 160 of which are fenced and cross fenced as well as under cultivation. Behind the land which is fenced, but which represents the other 160 acres which I own a wagon trail has been developed for the

(Continued on Page 330)

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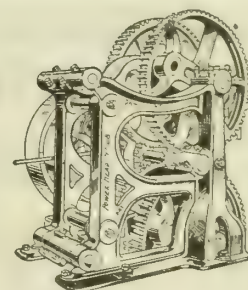
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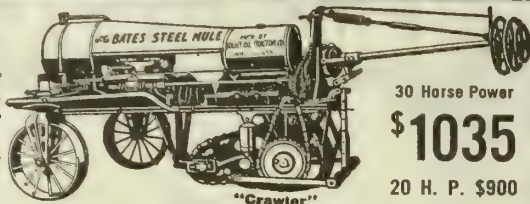
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WALNUT PRICES



It is the custom of the California Walnut Growers' Association to issue circulars to the trade which give information as to crop and trade conditions. Circular No. 1 was quoted in our columns a few weeks ago. Circular No. 2 is just out and announces that prices will be named September 30 but not in time for us to give to our readers this week. However, as to general conditions and especially as to the new carton method of marketing we quote:

"It is going to be our policy to name a price this season which will prove attractive and which we hope will develop a firm market. As we are contemplating a crop 40 per cent heavier than last season we realize that the prices we name must be low enough to permit of a larger than usual consumption of California walnuts and one that will permit of each of our customers handling a much larger volume of California walnuts than they handled last season.

"In our circular letter of August 1st, we gave you our estimate of the crop as 13,200 tons. Since that date there has been some additional dropping of immature nuts and a short spell of slightly unfavorable weather. This has reduced our estimate to between 12,500 and 12,800 tons, which figure is still much in excess of last year's tonnage. It is now certain that the harvest will be fully 10 days later than it was last season. The bulk of the shipments will undoubtedly move during the last half of October but in some sections packing houses will not open until October 15th. In 1914 the last of our shipments were ready to move on Nov. 7th. It will be at least the middle of November before we are able to close this season.

"We have been advised that reports are being circulated in some markets to the effect that the quality of the

develop this figure on account of the larger openings in the graders segregating the No. 2's from the No. 1's.

"We are aware that some of our competitors have again this season announced prices ahead of us. In this connection we desire to impress upon the trade that this Association, together with a few of the smaller associations not affiliated with us, but which operate along similar lines, control probably 80 per cent or more of the California walnut crop. In these associations it is the growers themselves, through their Board of Directors, who name the prices. Encouragement given commercial shippers by purchasing California walnuts from them at a firm figure before the Association announces its price, naturally influences the Association's growers' ideas, and oftentimes causes them to announce a higher price than they would consider otherwise. It should be borne in mind that commercial shippers' opening prices last season which were announced before ours, were higher than our figures. Is it not reasonable to presume that a similar condition will develop this year? When the commercial shipper sells a grade of walnuts at a firm price before Association opening prices are announced, he usually covers by purchasing from a grower. Naturally the price he pays the grower influences Association members' ideas and it is quite difficult to reconcile them to the lower prices which the Association often wishes to name. Undoubtedly lower prices would usually prevail if these early firm quotations were discouraged.

"We now have a fairly accurate estimate of the French crop and we give you herewith a set of comparative figures which we consider thoroughly reliable. We have two salaried agents in Europe gathering statistics for us, whose reports are checked against each other. We believe our foreign service cannot be improved.

"Cable received under date of Sep-

	Output—1914	Estimate—1915	Increase
Franquettes and Mayettes:			
Unshelled	14,500 bags		
For Shelling.....	56,000 bags	83,000 bags	23%
Marbots:			
Unshelled	30,000 bags		
For Shelling.....	90,000 bags	125,000 bags	4%
Cornes:			
Unshelled	56,200 bags		
For shelling.....	18,800 bags	80,000 bags	6%
Lots:			
Unshelled	6,000 bags		
For Shelling.....	24,600 bags	30,000 bags	Nothing

California walnuts will not be satisfactory this year. This report undoubtedly originated in the east, several thousand miles from the point of production, and is absolutely unfounded. From all appearances at this time our quality should be at least equal to that of last year and owing to the larger graders installed in every one of our packing houses, the sizes of the various grades should average larger than last season. We believe that the cracking standard we will guarantee will be very close to if not identical with that of last season. The report has also gone forth that there will be 40 per cent of No. 2's. This is also very inaccurate. Our prediction is that the crop will not average over 15 per cent to this grade and will only

tember 18, 1915, given in francs which we have translated into American money on a basis of 17.35c per franc figures prices to the New York importer, duty paid, as follows:

	Sept. 18, 1915 Price per Lb.	Quotations Oct. 1, 1914
Marbots	9.00c	9.75c
Cornes	8.18	8.65
Lots	8.18	8.25
Charentes	7.47	7.90
Mayettes	12.20	12.25
Naples	13.22	13.75

"You will understand that to above prices must be added the importer's profit before quotations are made to the jobber. It is noticeable that all of these prices tally very closely with the early figures last year. With the certainty that California stock will open

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See Announcement at Head of Editorial Page

lower than it did last season, it would seem that California walnuts will prove particularly attractive this year. We just received a cable this morning advising of an unusually hot spell in the Bordeaux section, which may or may not cause some damage to the crop. Our latest information is that shipments from France for America will commence about the 20th of October. This is earlier than last year. It should be remembered, however, that practically all of the early arrivals last year were rejected on account of quality, the goods evidently having been shipped without allowing sufficient time for curing.

"We are pleased to state that since announcing in our last circular of August 1st, our new package of Diamond Brand walnuts in No. 1 and No. 2 size cartons, we have received firm orders for over two million two hundred thousand packages."

GRAPE MILDEW IN SOUTHERN ARIZONA

In answer to a question as to whether the Thompson Seedless grape or other grapes in the Casa Grande Valley or the Salt River Valley of Arizona are given to mildew, Prof. J. J. Thorner, botanist, University of Arizona agricultural experiment station, says: "I may state that on only one occasion have I ever seen any grape mildew in Arizona and I have seen a great many grapes grown. This particular instance of mildew was in the Salt River Valley, where the plants had been persistently overirrigated and where the soil was drenched with water most of the time. The vines were yellowish from overirrigation and there were several plants which were very badly mildewed. I should say also that the soil was exceedingly heavy and not well adapted to grape growing. These grapes were getting perhaps three or four times as much water as they should have had, and it is not surprising that they were mildewed. There is no occasion for grape mildew in Arizona with proper culture. The Thompson Seedless grape is a great success in the Salt River Valley and it should be equally successful in the Casa Grande Valley. I have never seen it growing there but have no hesitation in making this statement."

DO SOMETHING

Touching upon the matter of securing action in the matter of marketing our products we have the following from Leslie W. Laumeister, secretary of the Porterville chamber of commerce:

Dear Sir:

"I noticed a recent article in your paper in which you make mention of marketing conditions in the east. This subject is being discussed very much lately not only in farming publications but by all the leading national conventions held this year. But what have they done? Nothing. All they did was to talk over the subject but never put any of their views into action. The fault lies in three different channels, namely—poor marketing conditions, lack of organization among the farmers and producers, and non-support from the different chambers of commerce in the districts affected. Recently at a meeting held by the commercial secretaries of the state at San Francisco, the members present brought up this subject but up to the present time nothing has been done by them."

"In order to get prompt action on this all-important subject, I would suggest that the different chambers of commerce call a meeting of all the growers in their districts and try and have something done for the growers."

ABOUT MORNING-GLORY

Written for the California Cultivator
By Sacramento Valley Contributor

"What are you going to do with those patches of morning-glory?"

"Nothing."

"Aren't you afraid they will be of great injury to the young trees?"

"No, when the trees get big enough to shade the ground the morning glory will disappear."

This is a part of a conversation that took place in a Sacramento Valley orchard recently and the owner was not worrying about the morning-glory because in a nearby orchard the trees had lessened the activity of the weed as the tops of the trees increased in size.

This is on rich river front land that is irrigated only during dry years. This year, for instance, it has required no irrigation for the maximum development of crops.

There are other orchards where morning-glory is worrying the owners and they are spending considerable money to keep it in check.

Morning-glory is getting to be a very serious pest in many sections of California. It seems as though the floods of last winter spread it into many fields where it had not been known. And it is such a greedy feeder and apparently so fond of warm weather that there are few crops than can compete successfully with it.

Because of its underground stems in which nutriment is stored up and from every joint of which the plant will propagate, it is one of the worst weed pests in the whole list to combat, and ordinary cultivation is a good stimulant to increased growth.

There are a number of stock recipes for eradicating morning glory. One of these is to cover it with salt. This is too expensive to use on large areas and injures the soil. Another is to cover the patches deeply with straw so as to smother the plant. Few have straw enough to cover any considerable area, and there are reports to the effect that the underground stems will live until the straw rots enough so the plants will come through it. This could be remedied by putting on more straw, probably, but this is a method that would be out of the question on big fields that are badly infested. Clean cultivation is recommended, and if kept at persistently for one or more years will undoubtedly do the work, but the cost of cultivation and the loss of the use of the land makes this very expensive if it is done to any great extent.

The Bigler-Paul-Furlong Agricultural Laboratories is developing a product that will undoubtedly kill the weed.

Rice is being grown on some lands that have had to be abandoned because the morning-glory made grain raising unprofitable. The water necessary to grow rice will kill the morning-glory. Where rice is grown on land of this character rice can be grown profitably for one or two years, the morning glory will be killed out, then grain may be planted as a rotating crop with the rice—to the benefit of both crops. And if the grain needs more moisture than is provided by the rainfall the pumps are available for irrigating.

Morning-glory is also successfully controlled where it is possible to grow irrigated alfalfa, particularly on land that produces a rank growth of alfalfa.

Where hogs can be pastured on it for a considerable period and where they can be put on a very light ration

that will make them root deeply in the ground for the morning-glory roots, the pest can be eradicated.

There are many large areas where rice and irrigated alfalfa cannot be grown easily and where hogs cannot be pastured where this morning-glory pest invites the activities of scientists or scholars who can show how to cheaply and easily do away with it.

SQUELCHING SQUIRRELS

Mr. Harry P. Stabler, horticultural commissioner of Sutter County, has been made inspector with power to enforce the provisions of the state law requiring extermination of squirrels. Mr. Stabler serves notice upon all property owners of the county in effect that all land owners and persons in charge of land are urged to wage warfare against squirrels as the state law will be strictly enforced.

The squirrel pest is costing producers of this state many thousands of dollars. It is time supervisors of other counties take the action which those of Sutter County have.

RIVERSIDE FAIR

Secretary O. P. Sanders is mailing premium list and rules for the third annual fair of the Riverside District Fair Association to be held at Riverside October 5-9. Every producer of

Riverside or nearby counties should write Secretary Sanders for this premium list.

TEPARIES MAKE A RECORD AT ANAHEIM

Following is the record of tepary beans: Planted May 1 in rows three feet four inches apart. Cultivated and irrigated as needed. Pulled vines August 16. Threshed August 21. Yield at the rate of 1750 pounds per acre.

The beans were drilled in the rows about six to eight inches apart.—J. B. Neff.

An agricultural bank law proposed for Argentina provides for 25-year leases on government lands on small rental payments and loans to individuals and agricultural associations at low rates of interest.

RHUBARB

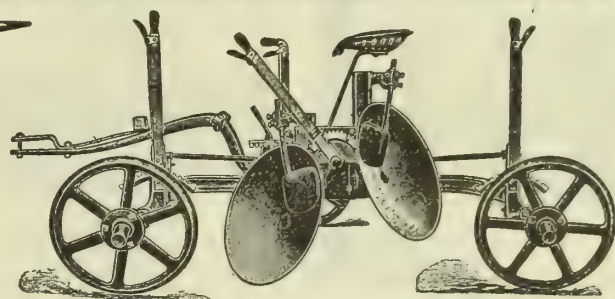
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RHUBARB

is planted during October, November or December, which are three of the best months. Good Results Should Be Derived by Spring. Write for Special Price on Plants for Fall Planting.

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SWEET PEAS. Payne's Winter Flowering. White, Pink, Pink and White, Primrose Yellow, Salmon Buff, Crimson, Lavender. Each, per pkt. 10c. Mixed, pkt. 10c.

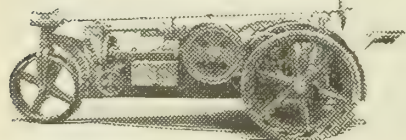
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The Lawn and



Flower Garden

ROCK GARDENS

Written for California Cultivator
By Earnest Branton



VERY year about this time I have a strong desire to build rock gardens. One who visits rocky canyons and notes the fine array of native plants on banks almost without soil cannot fail to be impressed with the possibilities of this phase of gardening.

Boulders have never appealed to me as being good material for rockeries though I have built many tons of them into such structures; the largest of six rockeries at Singleton Court in Los Angeles contained over five tons of such material and over 3500 plants, all of which were placed and planted by my own hands. Others built of broken granite, sandstone, etc., always appealed to me as being more artistic because more natural. One seldom finds a good natural rock garden among boulders for the latter form the floor of washes and canyon bottoms annually storm-swept.

Broken stone makes by far a better rock garden and every one of these should lie naturally, the largest area on the soil. Never stand a rock on edge in a rock garden. If you are merely making a rock border such use is permissible, but even here other material should be used. The same holds true in the use of boulders; never stand them on end or on edge, but let them lie as they would if carelessly thrown down and then sink each one into the soil to the point of its greatest diameter. In this way it will appear as though permanently imbedded, for the large circumference will appear at the soil level, lessening in size from base to top. Could any disposal be more natural?

I was called for consultation to the C. C. Foster ranch in Altadena, where someone had built boulder borders for paths and roads that irritated Mr. Foster, who said they looked like rows of gigantic horse's teeth. I went along the paths and with a gentle push of the foot tipped over stones weighing nearly a hundred pounds that had been stood on end. Taking one that was nearly egg shaped, I buried it as it would lie naturally, just one-half of it underground. At once it looked as though it might have so reposed for a century, and the owner was delighted. This, then, is the secret of handling boulders, if indeed there can be any secret where common sense dictates.

For plants in rock gardens we have an almost endless variety. It is not necessary to use cactus, so-called century plants (not one of which lives for more than a quarter-century), and others of this ilk, though they are not inappropriate among rocks of any sort. But we have so many sedums, stone-crops, echevarias or "hen and chickens" and other flowering and foliage plants that we do not need to use the larger sorts in small rockeries. In shaded, half-shaded, or even sunny locations one may use some ferns, for many will endure full sun. Our native brake, *Pteris aquilina*, may be seen at many points in Los Angeles on the south side of the houses, the hottest place in the premises. Not California

alone, but Australia, Africa, our South-western states, and Mexico supply such an abundance of rockery plants that we may have fine rock gardens everywhere.

Plant Bulbs Now

In some parts and by some people October is called the bulb month though it is but the first of several in which bulbs may be planted and if but one planting is to be made, November is a better month for this work. But bulbs may be planted now, dug if remaining dormant in the soil during summer, transplanted, or even dug and held for two or three months in-so-far as the general handling of bulbs is concerned. Soil cannot be worked too deeply or pulverized too finely or fertilized too heavily with rotted manure if ideal conditions for bulb-growing are to be made and such work will be amply rewarded by a superior crop of bloom.

Watering The Lawn

In last week's issue, on page 296, the editor used an article on this subject that will apply to lawns everywhere. Many, many times in these columns have I warned our readers not to sprinkle lawns every day nor to sprinkle them at all except sprinkling is continued until it becomes a real soaking. My own lawn, which is not beautiful as it is maintained merely as a playground for children, is watered but once a week. However, the sprinkler is set in one place and kept there until the water stands on the surface. As the surface becomes dry the roots grow down to moister soil and thus is a resourceful lawn made, one that will not suffer when watered but once a week.

Plant More Avocados

The avocado makes an ideal shade tree for the leaves are large and the foliage mass dense, the tree is umbrageous in natural growth and may be shaped to please the owner. A half-dozen trees disposed as they are on the Walker place at Hollywood make an ideal picnic grounds for young and old alike. When to this is added the value in fruit and in ornament, it would seem folly to plant shade trees that bear no fruit. Though the loquat has a double value in being both ornamental and fruitful it is not a shade tree as is the avocado, nor does it appeal to me as of equal value with the avocado on the two other points. In short, plant several avocados in the home grounds.

Globe Artichokes

Who hath considered our friend Arty Choke for a low damp place where a large, rough, yet ornamental plant will qualify? Is it not as ornamental as the quarter-century plant so much used? The latter toils not, yet if one gets within its toils he has a most disagreeable experience; neither does it spin anything that a well balanced individual should use. To be sure, the Mexicans make a vile drink from it known as pulque, but they lose their balance soon after using it. But the globe artichoke spins its food material into edible cocoon-like buds that are as "smooth as silk" to him that is hungered and, as stated,

the plant is also quite ornamental.

Care For Roses

Now is the time to begin work on the rose beds, for autumn flower wood is in the making and all bushes will soon bristle with new growth and buds are in evidence even now in many gardens. Do not heavily prune roses in this condition for it is harvest time. Prune out all weakly wood, branches that cross, congested centers, and shape bushes slightly—not too much. Depend upon your pruning later, in spring, after the first sprout of blooming is past. Manure heavily, spade into soil, rake smoothly and if possible cover with a heavy mulch of strawy manure. Watering on top of the later will keep a clean carpet to walk on while picking flowers, also feed plants and keep weeds from starting.

Plant Wild Flowers

In neglected gardens that receive an occasional watering a new crop of California poppies is springing up and some are already in bloom. This suggests that wild flowers in natural haunts will thrust up their tops just as soon as they receive the encouragement of the earliest rainfall. It also suggests that we should prepare a bed for a wild flower garden at once. Wet the soil, destroy the weed crop with a hoe; do it over again, then spade up the soil, smooth it down well, start that last crop of weeds and after their destruction sow a generous mixture of California native wild-flowers and reap a rich reward in blooms, many of which will be new to you, as they are native to other parts of the state.

The Moreas

In addition to Morea iridivides, which I have often recommended as one of the finest members of the iris family, there is another species in local collections that is equally beautiful. Morea iridivides closely resembles some of the true iris and is white in color with markings of brown and yellow. The other species is a deep golden yellow with circular spot of real black near the base of each petal, forming a striking yet beautiful contrast of colors. Both species require the same general treatment as iris, which is but ordinary care usually given general collections of garden plants.

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Farm Bureaus



FARM bureaus are increasing in popularity and many of the centers are uniting more effectively with the county agents. In Madera County the Mountain Farm Bureau Fair was held as announced.

This month's calling dates are as follows:

Madera County, Thos. C. Mayhew, Agent, Madera.

Chowchilla, October 4.
Alpha, October 8.
Dixieland, October 12.
Fairmead, October 15.
Raymond, October 22.
Nipinnawassie, October 23.
Oakhurst, October 25.
Coarse Gold, October 26.
North Fork, October 28.

San Diego County, H. A. Weinland, Agent, San Diego.

Bonsall, October 1—Meeting, school-house, 8:00 P. M.

San Diego, October 2—Directors' meeting, 11:00 A. M.

Encinitas and vicinity, October 4 and 5—Meeting Encinitas, October 4.

Fallbrook, October 6.
Juliah and vicinity, October 7 and 8—Meeting Julian, October 8.

San Diego, October 9—Office day.

Dehesa and vicinity, October 11 and 12—Meeting, Dehesa, October 11, 8:00 P. M.

Ramona and vicinity, October 13 and 14—Meeting Ramona, October 13.

Jamacha, October 15—Meeting Jamacha, 8:00 P. M.

San Diego, October 16—Office day.

Spring Valley and vicinity, October 18 and 19—Meeting Spring Valley, October 18, 8:00 P. M.

Poway and vicinity, October 20 and 21—Meeting Poway, Wednesday, October 20, 8:00 P. M.

Mission Valley, October 22—Meeting Mission Valley school house, 8:00 P. M.

San Diego, October 23—Office day.

El Cajon and vicinity, October 25 and 26—Meeting El Cajon, October 25, 8:00 P. M.

Otay and vicinity, October 27 and 28—Meeting Otay, October 27, 8:00 P. M.

Campo and Boulevard trip, October 29—Meetings indefinite.

San Joaquin County, Frank F. Lyons, Agent, Stockton.

The San Joaquin County farm bureau will hold its annual meeting and election on October 30 at the court house, Stockton. We hope to have Professor G. H. True and Professor Elwood Mead speak on dairying and rural credits. There will be no feed or fair at this time, as the farm bureau is participating in the South San Joaquin Community Fair to be held at Manteca on the 8th and 9th of October.

Acampo, Friday, October 1—J. H. Clancy, director.

Directors' meeting, Stockton, Saturday, October 2.

Thornton, Monday, October 4—G. L. Barber, director.

Lodi, Tuesday, October 5—Geo. Ashley, director.

Farmington, Wednesday, October 6. Community Fair, Manteca, Friday and Saturday, October 8 and 9.

Lockeford, Monday, October 11—N. H. Locke, director.

Linden, Wednesday, October 13—E. L. Davis, director.

Manteca, Friday, October 15—Ed. Powers, director.

Escalon, Monday, October 18—E. A. Clough, director.

Ripon, Thursday, October 21—J. P. Watkins, director.

Tracy, Monday, October 25—H. A. Frerichs, director.

Waterloo, Wednesday, October 27—R. J. Benjamin, director.

Holt, Friday, October 29—J. A. Aggeler, director.

Directors' meeting, San Joaquin County Dairymen's Association and annual farm bureau meeting and election.

Kern County, Roland R. Mack, Agent, Bakersfield.

Wasco, October 4, 8 P. M.—W. T. Fowler, director.

Delano, October 6, 8 P. M.—R. H. Hiett, director.

McFarland, October 8, 8 P. M.—P. M. Peterson, director.

Rio Bravo, October 9, 8 P. M.—T. N. Martin, director.

Panama, October 11, 8 P. M.—A. B. Robinson, director.

Rosedale, October 13, 8 P. M.—John Waters, director.

Tehachapi, October 19, 8 P. M.—L. T. Jenkins, director.

Muroc, October 20, 8 P. M.—C. E. Clark, director.

Willow Springs, October 21, 8 P. M.—C. S. Millarr, director.

Arvin, October 22, 8 P. M.—R. Haven, director.

Bakersfield, October 23, 8 P. M.—M. J. Adams, director.

Shafter, October 27, 8 P. M.—E. U. Combs, director.

Napa County, H. J. Baade, Agent, Napa.

Salvador, October 2.

Browns Valley, October 6.

Coombsville, October 7.

Wooden Valley, October 8.

Soda Canon, October 9.

Napa, October 9—Directors' meeting.

Carneros, October 11.

Fly, October 13.

Calistoga, October 14.

Soscol, October 16.

Rutherford, October 18.

St. Helena, October 20.

Pope Valley, October 22.

Mt. George, October 23.

Berryessa, October 27.

The subject of "Acid Soils" will be discussed at these meetings.

Ventura County, Wm. B. Parker, Agent, Ventura.

Fillmore, October 4—W. H. Fleet, director.

Ventura Avenue, October 8—Henry H. Neel, director.

Nordhoff, October 11—Guy T. Stetson, director.

Oxnard, October 13—Thomas A. Rice, director.

Camarillo, October 15—E. W. Daily, director.

Bardsdale, October 18—Thomas Wileman, director.

Saticoy, October 20—J. N. Procter, director.

Moorpark, October 21—Aratus Everett, director.

Somis, October 25—F. A. Snyder, director.

Mound, October 26—E. W. Gerry, director.

Simi-Santa Susanna, October 27—R. E. Harrington, director.

Santa Paula, to be arranged—L. E. Mills, director.

Solano County, J. W. Mills, Agent, Fairfield.

Rio Vista, October 5.

Vallejo, October 7.

Suisun, October 12.

Cordelia, October 14.

Vacaville, October 19.

Dixon, October 21.

Glenn County, W. H. Heilemann, Agent, Willows.

Bayliss, Friday, October 1.

Ord, Tuesday, October 5.

Larkin, Friday, October 8.

Codoro, Tuesday, October 12.

Jacinto, Friday, October 15.

Orland, Tuesday, October 19.

Regular meeting of the board of directors will be at the farm adviser's office October 2, 10 a. m. Annual meeting for election of officers Willows, October 9.

Strength

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This drawing is made from a photograph, showing an upper tumbler casting (used on Yuba gold dredges) suspended by a Ball Tread Tractor chain.

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Factory at Marysville, California

433 California Street

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CALIFORNIA

THE YUBA CONSTRUCTION CO.
Department B-9

433 California Street
San Francisco, California

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Alfalfa..... Hops..... Hay..... Grain.....



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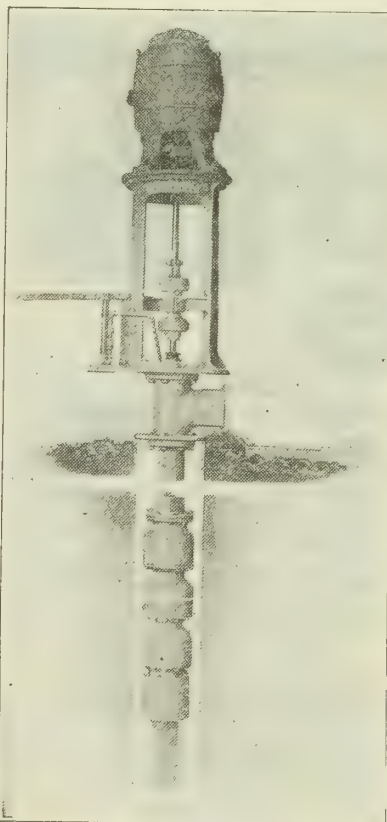
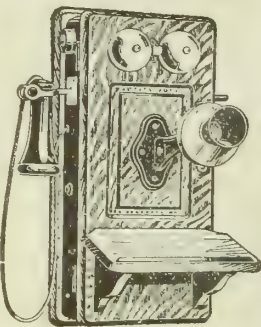
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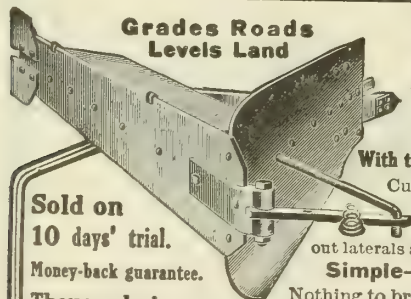
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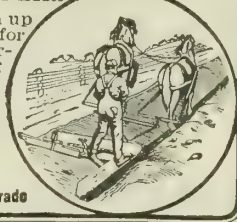
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RURAL CREDITS

(Continued from Page 315)

bled his returns. The producer used to get 20 cents out of every dollar; today he is getting 40.

"Successful cooperative efforts are based on the fundamental principle of having the coin behind them, not good faith. It is sometimes suggested to me that it is not necessary to sign contracts; all we need is a 'gentlemen's agreement.' The only answer I make is that I am afraid I might forget to be a gentleman."

CHEAPER MONEY

Address by Myron T. Herrick

(Concluded from last issue)



AFTER the needed revision of the state laws had been made, the next step should be the enactment of laws for bond-issuing institutions.

Such institutions are especially necessary for long-term mortgaging, because the money is invested for so many years and comes back so gradually that such business is not practicable for private individuals; it is not practicable either for small or ordinary sized banks or companies that have only their own capital stock or deposits to lend, since the length of the investment and the slowness of its recovery would eventually immobilize their assets and reduce them to inactivity. The business is rarely attempted except by institutions that are able to reach the money of the investing public through the issue and sale of bonds or debentures. The bond-issuing institutions are of three kinds: (1) state-aided banks, or government bureaus or commissions; (2) private bond-and-mortgage companies; (3) landschafts.

Which of these should the United States adopt? The first in Europe are founded, not for ordinary farmers, but usually for ignorant and indigent peasants, or for carrying out some political policy. They operate with public funds or on government guaranty. The mortgages they acquire are only incidentally the security for their credit instruments. Consequently, their establishment would only confuse the problem of the reorganization of land credit. We are striving in the United States to put land credit on its true and proper base—to enable the land itself to be the course and the security of the money borrowed upon or for it. This cannot be accomplished through state aid; it rests upon the effective mobilization of land values. Let us look this question squarely in the face. If government is going to find the money for farmers, what is the use of bothering about improving land credit? Both borrowers and investors would expect government to stand good for all losses. But if the reorganization is to rest—as it should—upon the land itself, then the enactment of proper legislation becomes absolutely indispensable for creating the necessary powers and safeguards, especially for bond-issuing institutions; aside from state-aided concerns, the only two kinds are private bond-and-mortgage companies and semi-public landschafts.

The companies have capital stock; this invariably is large and necessarily so, in order to give a financial strength and standing that will assure an adequate flow of money and cheapness of operation. The disregard of this vital point is a shortcoming of the recent laws of Indiana, Wisconsin and Utah which allow the formation of companies so small that they will

be utterly unable to inspire public confidence or command an active market for their bonds. Agriculture should have institutions of a size commensurate with its needs. I am inclined to believe that the legislators, who hesitate to permit the assembling of the enormous capital that American farmers require, are actuated more by political considerations than by reason. Perhaps they are imbued with that false sentiment which prompted the Chinese to oppose railroads for fear lest the innovation would disturb the repose of their dead ancestors. Small bond-issuing companies should not be allowed, because they would open the field to irresponsible promoters and possibly lead to serious consequences, since they might flood the country with worthless stocks and bonds and bring on a crash exactly as happened to the old farm-mortgage business in 1893.

If the laws contained the proper regulations and restrictions, large companies could not possibly occasion any alarm. So I believe that the laws for bond-and-mortgage companies (or land-credit banks, as some people call them) should require capital stock of an amount sufficient to establish their financial standing. Particularly ought this to be so with any federal legislation that might be enacted. At the same time the states ought to pass laws for landschafts, so that the farmers could join institutions of their own, should they become dissatisfied with the facilities afforded by the companies. The existence of these two kinds of concerns, operating side by side, would give rise to a healthy competition that would forever prevent oppression and keep the money market continually open for rural landowners.

Not one state has yet thought to have a law on landschafts. These institutions, however, are the original organizers of land credit, and they remain the best for according long-term credit on farm land. A landschaft is a subdivision of a state, with executive officers appointed by the governor upon nomination of resident landowners enrolled as members. Nobody joins except applicants for loans, and membership ceases upon payment of the loan. Its powers are to issue debentures in exchange for annuity contracts secured by mortgages on the farms of members. The debentures are the joint and several obligations of all the members—and thus individual is replaced by collective credit, and all the mortgages are amassed to secure each and every debenture. This is the safest, soundest, and most easily negotiated security ever devised for land credit. As a result members of a landschaft get loans on better terms than do borrowers from any other kind of lending concern.

A landschaft has no capital stock, and it distributes no profits. All its earnings go to pay its expenses and to reduce the cost of business for the mortgagors. Different from a company, a landschaft does not sell its debentures; it swaps them for the mortgage contract of the borrower and lets him find a buyer. The proceeds go directly to the borrower. Consequently, a landschaft deals in credit and not in cash, and it never has any fund on hand except from the repayments of borrowers; and this must be paid out again every six months in redeeming debentures. Moreover, if the laws are properly drawn, a landschaft is not required to redeem debentures any faster than the borrow-

ers repay their loans. This is its only liability—to pay over to the bondholders what it receives from the borrowers; and so it is protected by the very same safeguard prevailing in true building-and-loan associations, which is that it cannot contract heavy obligations to outside parties. The reorganization of land credit in the United States would be incomplete without landshaffs. With them, an adequate flow of money would always be assured to landowners.

The subject of land credit has been given the greater attention; nevertheless, without any intention to depreciate this, I will say that cooperative banking is by far the more important feature in this movement. Rural cooperative banking is badly misunderstood. The widespread misconceptions about it have belittled and impeded the movement. Many (perhaps the majority) think that the sole function of a cooperative bank is to collect members' savings to lend to members; that is, to make small loans to members out of their own money. This limitation may be all right for an urban cooperative bank, but it is all wrong for a rural co-operative bank, because farmers, as a rule, have no money to lend to one another; and this fact cannot be changed through co-operation.

This error has been written in the laws for the so-called credit unions of New York, North Carolina, Wisconsin, Texas, Utah and Oregon. These are copies of a similar law in Massachusetts which the framer, Mr. Pierre Jay, agent of the New York Federal Reserve Bank, admits was enacted for the poorer class of city dwellers. The error has made these laws useless for agriculture, and they will have to be recast. In 1914, by authorizing these little thrift societies to issue bonds and grant forty-year loans, Massachusetts made her law a very dangerous piece of legislation. The defects in all these laws are so serious that the public should be warned against organizing or patronizing these misnamed credit unions until safety is assured by the necessary amendments. The credit-union laws are a conspicuous instance of good intentions gone wrong through immature thought and hasty action.

The cause of much of the misunderstanding about cooperative banking and credit is the mistaken notion that cooperation is an altruistic or benevolent means of helping the down-and-out class or persons who are individually weak and incompetent. This half-truth is alive with dangers. Co-operation can never help anybody except him who is able and willing to help himself—and his neighbor also. True, cooperation is the quickest way to success for the humble as well as for the high, but its literal interpretation is organized mutual self-help. It presumes that men will work harder, longer and better together than when standing alone; it requires a spirit and an ability to both give and receive; and it can reach its fullest development only among persons who are capable and honest, and known to be so—among persons who ask no favors, who spurn charity and state aid, and rely solely upon their own talents, toil and resources.

There is more cooperation in the United States than in any other country, and it is used here even for the largest undertakings. The gathering and distribution of news by the Associated Press is the most striking example in the world of cooperation conducted on a grand scale without

lucrative object. The life-insurance companies, with their millions of policy-holders and billions of dollars of assets, and the mutual savings banks and building-and-loan associations, with their stupendous totals of deposits, savings and reserves, put most of the funds of organized thrift under cooperative management, while trade unionism (the oldest kind of cooperation) permeates the laboring classes. These are city-centered, but do not constitute all the cooperative activities. Cooperation appears in inconceivably varied and innumerable enterprises. The protection of the levees from breaks is in some of the states bordering the Mississippi river a cooperative work. Farmers' organizations for safeguarding mutual interests are numerous, while rural co-operation for business has already made substantial progress, but chiefly for marketing fruits and the manu-

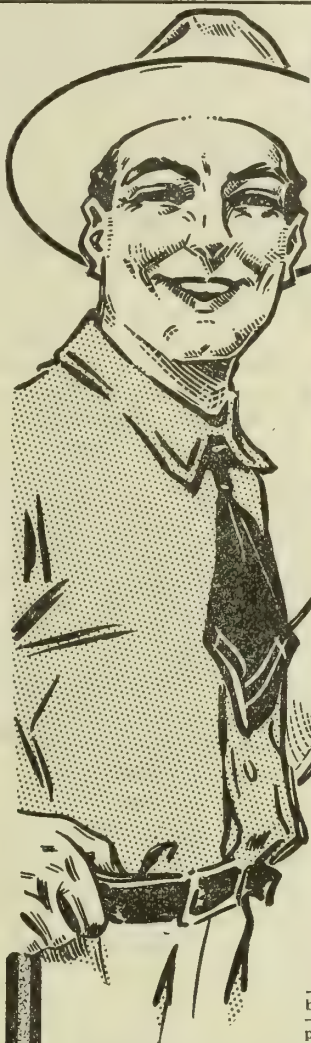
facture and disposal of milk products.

If American farmers should awake to the full realization of its possibilities, they would soon be using cooperation in all their industrial, commercial and financial affairs relating to agriculture. With the splendid examples in the city before them, it is strange that they have lain dormant so long. Cooperation may, of course, be practiced through a corporation or in a partnership, but the association is its best breeding ground and nursery. In the United States, however, the purposes for which an association may be organized are limited. Business and ordinary banking have been content with the corporation and partnership. The propagandists should broaden their views and strive to make lawful for associations whatever may now be done through these other two forms of organization. Furthermore, if they wish to see rural co-

operation reach its highest development, they should advocate such a modification of the anti-trust laws as would permit cooperative associations to combine.

Combination of associations is absolutely indispensable for rural co-operation. The creation of detached and isolated associations would leave the work incompletely done. There should be systems of inter-related associations; and I hope to see the day when agriculture in the United States shall be organized by local, regional, state and departmental groups bound together by unions and federations into great national systems for strengthening the purchasing and selling power of the farmers and mobilizing their resources for their financial needs. Organized in this cooperative way, the farmers would have first use of their wealth for financing themselves; their forty-five billion

(Continued on Page 328)



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\$1.25 Black Graphite Roof Paint, 50c

—Nothing better for a shingle roof, fills up the cracks and pores. This price per gal., in 5 gal. lots. We've sold thousands of gallons of this paint and have yet to hear of it's not giving satisfaction.

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Shingle Stain, 50c

—Our own "Standard" brand, made from pure ground colors, all desired shades. Will hold its color longer than many of the higher priced stains.

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—This one item will prove to you that we do sell paints cheaper than any dealer in the West. Our tremendous volume of business makes this possible. All colors.

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—This is a special 2-point light Star, weighing 50 pounds to spool of 80 rods. Our price per spool..... \$2.00

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—2-point galvanized barb wire, weighing about 73 pounds per spool of 80 rods. Our price..... \$2.55

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—Now, today, is the time for you to do as hundreds have already done, and order a year's supply of these shovels.

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"Standard" Roofing Paper

—A splendid quality of roofing that most firms would sell 20 to 40 per cent higher. Each roll complete with necessary cement, nails, etc., ready to lay. Send for FREE sample.

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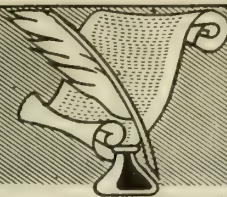
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are used to support a family of young-
sters with healthy appetites it is rea-
sonably sure that the "farmer" will
be stung.We believe in intensive farming.
We all know the American farmer is
lax in utilizing all his possibilities,
and this small farming effort may re-
sult in educating to more use of the
forces at hand. But let us be reason-
able.**NITRATE OF SODA**Chile now exports in the neigh-
borhood of two and a half million tons
of Chilean saltpetre, or nitrate of soda,
on which it collects an export duty of
ten dollars. In fact, this one export
which she exports practically sup-
ports her government. It is an in-
teresting fact that the first shipment
out of that country of what was then
known only as Chilean saltpetre was
made in a sailing vessel coming around
the Horn which landed at various
Atlantic ports of this country. The
captain of the vessel was unable to dis-
pose of the few tons of saltpetre he
carried and finally was compelled to
dump it overboard. Today we are pay-
ing two and a half and three cents
per pound and asking what we will do
for nitrogen when Chile's great supply
is exhausted.**LEMONADE**We recently inquired at a soda
fountain as to how many sodas of a
certain flavor extensively advertised
were sold to one lemonade, and the
first answer was, "99." The proprietor
immediately withdrew this, however,and said, "No, it would be nearer
200" and this an attendant corrected
by saying it would be nearer 300. The
only reason given for this preference
was that the drink was so extensively
advertised.This particular drink may be harm-
less though at one time there was talk
of regulating its sale by those who had
to do with the enforcing of the food
and drugs act and we can see no rea-
son why the demand for it should be
so great.We recall well the time when a cold
and pure lemonade was considered the
most healthful and most attractive
drink offered for sale. Unfortunately
it takes time to make good lemonade.
The lemon flavored soda water drink
is a mixture of syrup, often of chemi-
cally made "lemon" flavor, into which
is drawn the carbonated water. Why
pure lemon juice and syrup cannot be
used in place of this concoction we
fail to see other than that the soda
water men claim it takes more time
to prepare, especially does it take
more time to make from fresh lemons
a glass of lemonade, but if the people
could be educated to demand it the
soft drink dispensers would soon learn
to make it.The soda fountain where this infor-
mation was secured daily serves thou-
sands of patrons, but the proprietor
told us that the demand for lemon
drinks called for less than one dozen
lemons per day. It is time for Califor-
nians to inform the people as to the
healthfulness of this neglected drink.**RURAL CREDITS**We have given practically entire
the address of Myron T. Herrick at
the Rural Credits session of the Inter-
national Irrigation Congress. We do
not agree fully with Mr. Herrick, but
he is a keen observer, has made long
study of credits and his words are well
worth considering. He takes the
ground, however, that the state must
keep its hands entirely off of any ar-
rangement whereby the farmer is to
be financed. He says truly that there
is much misunderstanding about co-
operative banking and credit in the
mistaken notion that cooperation is
"an altruistic or benevolent means of
elevating the down and out class." We
believe with him fully in this and
if the movement which aims to do jus-
tice to the farmers takes on a color of
paternalism or philanthropy it must
necessarily fail. The farmer is not
asking favors, simply justice; nation
and state may join in aiding the farm-
er to secure funds with which to
finance the agricultural operations of
the country. It is probable that no
one is at fault that there has been
discrimination in the past but certain
it is large manufacturing and commer-
cial operations have been boosted
with a much lower overhead expense
than have agricultural operations. The
present rural credit movement
will answer that question and we be-
lieve the remarks of Mr. Mead, as
quoted by our contributor on leader
page of this issue, point more cor-
rectly to a solution than do the re-
marks of Mr. Herrick. Perhaps Amer-
ica can do better than has Australia
or New Zealand, or even Germany or
other European sections, where for a
long time there has been opportunity
to secure amortized loans. Certainly
state aid has proven a wonderful
blessing to Australia.**OLIVE GROWERS' PROBLEM**Orchardists and gardeners and
producers of almost every farm crop
are confronted with a serious problem.Many of them, in fact, with the wear-
ing out of the land and its consequent
renewal, and many other cultural prob-
lems, are kept busy with the cultural
side of farming, but once they have,
to a degree at least, mastered those
problems, a still greater one looms be-
fore them—a market. The California
olive grower has grown the finest
product of its kind in the world, at
least to the taste of most of us on the
Pacific Coast. It is a food and not a
relish, and one of the most nutritious
of foods, but for some reason the peo-
ple of the world do not appreciate this
fact as they should and as we know
they will. Now, how may these people
be educated so as to take this food
which we produce to the extent of a
million and a half of gallons annually;
also another food, olive oil, of which
we produce approximately a million
and a half of gallons, not taking into
consideration the vastly increased pro-
duction when the remainder of the 28,-
000 acres now planted in olives comes
into bearing? The demand has been
created to a degree for these products
when imported, for we annually im-
port about 6,000,000 gallons. Califor-
nia olive products have won medals
and honors at all expositions over the
European product. Why then this lack
of appreciation on the part of the
American consumer? In view of the
fact of the present production in ex-
cess of demand for the California
product olive growers in the Northern
part of the state have started a cam-
paign to organize for marketing pur-
poses. Unfortunately, there was an
impression that the movement looked
toward creating a great demand for
California olive products through ad-
vertising only, and as the membership
was limited to producers many of them
felt that this meant the creating of
a demand for California olives of all
brands, whether good, bad or indiffer-
ent, and that the packer must first
secure the benefit and dispose of his
stock before he would come back and
purchase of the grower.We attended a meeting in Los An-
geles last Saturday at which the aims
of the new association were stated and
we noted that this same impression
prevailed. The organizers assured us
that they are simply engaged in the
preliminary steps and they urge all
olive growers to unite in this prelimi-
nary movement in order to perfect a
workable marketing organization.We well recall when Mr. Chamblin
was preaching to the discouraged or-
ange grower the gospel of organiza-
tion. Cooperation at that time was
noted for its failure, and Mr. Cham-
blin's effort made slow progress, but it
finally was organized on the general
plan of community first, the state or
larger organization afterwards. How-
ever, the raisin growers we believe
have organized along the other line,
perfecting a great strong organization
and building up branches from it,
hence this feature of the olive grow-
ers' effort may be best, but we think
the management should make every
effort to show to the growers that the
prime object will be a standardized
product for which thousands may be
expended in advertising. But if the
advertising precludes standardization
an indifferent product under the cho-
sen brand may do more harm to the
organization than would the thousands
spent in advertising benefit it. The
olive growers must organize and we
trust they will take a hand in a move-
ment which will lead to success. To
that end every olive grower should
look into the organization which is
now on the way.**Agricultural Notes**Maple sugar is very short in Canada
this year, about one-third of a crop
being secured this spring.South America has heretofore been
supplied with potatoes by Europe.
Owing to war conditions she is now
looking to the United States for this
food.Coffee pulp is being utilized for
manure in Southern India. The pulp
is taken as it comes from the pulper,
dried and composted, and is then ready
for use.The bureau of plant industry of the
department of agriculture is distribut-
ing date palm offshoots recently im-
ported by the Date Growers Associa-
tion from the date gardens of North-
ern Africa.New Zealand grain farmers are ap-
prehensive of a scarcity of harvest
help and have asked for government
cooperation in the releasing of labor-
ers on public works during the har-
vest season. The season in that south-
ern island lasts from December to
April.The wool trade section of the Brad-
ford, England, chamber of commerce
recently held a meeting to consider
what to do with the accumulations of
wool. Storage capacity is exhausted
and the British clip is already being
delivered. It is suggested that a large
public warehouse be erected by the
municipality for storing the excess.The prohibition against the impor-
tation into Cuba of cattle, sheep, goats,
and hogs from the United States,
which was adopted because of the
prevalence of the foot-and-mouth dis-
ease in this country, has been re-
pealed, and these animals may now be
imported through the port of Habana
upon compliance with the prescribed
regulations.The report of the Kansas state
board of agriculture for the first quar-
ter of 1915 contains matter of special
interest to Californians at present in
reporting investigations as to sweet
clover, feterita and Sudan grass. We
do not know whether this report will
be sent free to Californians but those
who are particularly interested may
get in touch with J. C. Moore, secre-
tary of the board, Topeka, Kansas.The shortage of dyes which the war
has brought about in this country is
causing a scurrying around to see what
can be done within our own bounda-
ries. It is now reported that the osage
orange used for farm fences to a great
extent in the Middle West promises to
be the means of supplying natural
dyes. The dyes are made from the
"fruit" and it is said that 40,000 to
50,000 tons of "oranges" can be deliv-
ered each year.California egg producers are not the
only ones who are having trouble with
imported eggs. Notice the following
from Auckland: "The high price of
grain for chicken feed in New Zealand
has so much affected the price of poul-
try and eggs that it is found profitable
to import instead of export, as has
been the custom. This has caused the
poultry raisers to protest, for they
claim eggs are imported from Amer-
ica and other foreign countries and
sold as fresh-laid eggs. They have
asked the government to apply the
food and drug law to compel import-
ers to mark the origin of all eggs im-
ported; also, that all chilled eggs of-
fered for sale be branded as such. It
is not possible to give the imports of
poultry and eggs from the United
States since they are not listed."

Agricultural News Notes



of the Pacific Coast

Northern California

Butte County dairies are increasing the number of silos.

Sutter County rice growers report exceptionally good yields.

Geyserville, Sonoma County, reports an exceptionally fine prune crop.

Thermalito, Butte county, is discussing the formation of an irrigation district.

The burning of a winery near Forestville, Sonoma County, caused the loss of 635,000 gallons of wine.

The Hopgrowers Association of California proposes to establish permanent offices in Sacramento.

Willows, Glenn County, reports that there will be extensive planting of rice in that county next season.

The Almond Festival at Esparto called out a big attendance and has been declared a complete success.

The headquarters for the Placer County farm bureau are now in the chamber of commerce rooms at East Auburn.

Colusa County rice growers have arranged a blackbird alarm or scarecrow which is proving effective in saving the rice.

J. W. Jeffrey, representing the State Viticultural Commission, finds wine grapes selling in Napa County for \$12 to \$13 per ton.

Engineers of the state highway commission are working on a line establishing grades on the road from Auburn to Nevada City.

Ukiah, Mendocino County, people have decided that on account of the exposition it will be unwise to hold their hop festival this season.

The board of directors of the Sacramento Valley Development Association has called a conference of producers to discuss marketing problems.

Wine grape producers are feeling more encouraged at the situation, especially as the larger winery interests have decided to be more liberal in their treatment of the grower.

Warehousemen of Sutter County are planning for storing the biggest crop of beans ever produced in that section. Blackeyes have been yielding in the neighborhood of 20 sacks per acre.

Live stock men of Yuba County report that many cattle of that county are affected with a serious skin disease which has been most baffling to veterinarians who have been employed.

The Gridley, Butte County, cow-testing association has completed its first year, and finds the association has resulted in eliminating many boarder cows and in putting the dairies on a more profitable basis.

Rice growers of Yolo County have decided to join the Pacific Rice Growers' Association. The association is being organized in Butte County and hopes to build warehouses and otherwise encourage the industry.

Butte County orange growers have formulated a statement to the department of agriculture regarding the eight-to-one test. The growers feel that the present ruling is an injustice to their section and are asking Congressman Kent to present the matter.

Central California

The Kingsburg Growers' Cannery has packed nearly 60,000 cases of fruit.

The new peach growers' organization has made sales in its corporation stock to the extent of \$70,000.

The Fresno District Fair is attracting attendance from all sections of the San Joaquin Valley this week.

W. L. Whepley, a representative orchardist of Tulare County, died at his home at Lemon Cove last week.

Raisin-makers are watching the sky for indications of rain, and hoping the rain will hold off for a few weeks longer.

The Prunegrowers' Committee of the Santa Clara Valley is urging growers to stand firm for a five-cent prune.

A milk condensing company is contemplating the establishment of a condensary at Turlock, Stanislaus County.

A large herd of purebred Jerseys was sold at final dispersion sale at Hanford last week. Prices ranged from \$100 to \$200.

Peach growers at Fowler, Fresno County, recently held an enthusiastic meeting and decided to unite with the California Peach Growers' Company.

One canvasser in the Kingsburg section recently turned in subscriptions to the extent of \$7200 to the California Fruit Growers' Company.

Amongst farmers' institutes being held in Monterey County, those yet to be held are at San Lucas, September 30; Lockwood, October 1, and San Ardo, October 2.

Land owners in the proposed Lindsay-Strathmore irrigation district of Tulare County are protesting against the formation of the district. If organized along the line of suggested boundaries it will comprise about 80,000 acres.

Growers at Hanford appeal to the county sealer of weights and measures to investigate as to nine and a half pounds tare weight taken off for each box in a load of fruit. Careful weighing of a number of boxes showed them to weigh less than nine pounds.

Former State Horticultural Commissioner J. W. Jeffrey is securing information from vineyardists of Merced County for the State Viticultural Commission. The commission hopes to induce the wine manufacturers to handle the greater percentage of the second crop.

The sheriff of Fresno County is busy keeping in touch with raisin thieves who are not content with a handful but go with trucks to dry yards and take them off by the ton. Six of such thieves were captured within a week.

California is shipping about 200 cars of fresh grapes daily.

A new cattle corporation has been organized at Corcoran, Kings County, with a capital stock of \$200,000. The company is to be known as The Kings County Land and Cattle Company. It has purchased over 3000 acres of land southwest of Corcoran, which it will devote to dairying, alfalfa and hog raising.

Southern California

Imperial Valley farmers are hoping for a rise in cotton prices.

Chino, San Bernardino County, has raised \$40,000 for its new cooperative cannery.

Arrangements for the cooperative cannery at Hemet are progressing satisfactorily.

San Luis Obispo County poultry and sheep people are appealing for protection from coyotes.

The California Fruit Growers Association handled over 62½ per cent of the citrus fruit of California.

The Associated Chambers of Commerce of the San Gabriel Valley picnic in the San Gabriel Canyon on Saturday of this week.

Lompoc, Ventura County, has finished the harvesting of its mustard crop. One threshing machine had a continuous run of 53 days.

The Beaumont Fruit Growers' association packing house is busy shipping Jonathans, which are commanding from \$1.75 to \$2.00 per box.

San Bernardino County motor cops are becoming active and insisting on all vehicles, whether horse drawn or propelled by gasoline, exhibiting lights at night.

The Pomona Valley Canning Company closed its season's run with nearly 3,000,000 quarts of fruit in cans. The payroll for the cannery during the season was \$28,000.

Lima bean growers at Mound, Ventura County, are urging a more general marketing organization of lima bean producers. The crop will be much smaller than first anticipated.

Cities of Southern California which have municipal water plants are invariably pleased at results. The water plant of the city of Pasadena netted that town for the month of August \$14,331.

The United States attorney is making application for injunction against a land company filing on the waters of Pauma Creek, maintaining that such waters belong to the Indian Reservation.

The Saticoy, Ventura County, farm bureau center is working on a flood control proposition which will protect farming lands from storm waters. Farmers have been trying for years to secure protection.

Every drop of water in the Colorado River is flowing into the intake that feeds the canal system of the Imperial Valley, according to the announcement made by Receiver Holabird of the C. D. Company.

Riverside orchardists who had property near the plant of the Riverside Cement company have settled with the company on the basis of \$86 per acre because of damages sustained from dust floating over the country from the mill.

Lima bean growers of Orange County are perfecting their organization and are now better organized than those of Ventura County. However, Ventura growers are coming into line and a successful season is promised to the growers.

The Coast

Arizona receives about \$60,000 of the national forest fund.

A one day fair will be held at McNeal, Arizona, on October 9.

A land products show is scheduled for Portland, Oregon, October 25 to November 12.

British Columbia reports a pear crop at least 25 per cent larger than the record.

Dairymen of the Salt River Valley, Arizona, have organized a cow testing association.

Nearly all sections of the Northwest report potato crops from 50 to 75 per cent of normal.

Winter Banana apples are now commanding about \$2.00 per box at point of delivery in Eastern Washington.

Minidoka County, Idaho, reports fruit harvest as very light because of late spring frosts and hot dry summer.

The Eighth Annual Apple Show will be held at Spokane, Washington, this fall with \$2000 cash premiums to be offered.

Five thousand feeders have been shipped into Chandler, Arizona, and there is difficulty in securing sufficient pasturage.

One county in Utah which last year shipped 680 cars of peaches shipped this year less than 50 cars, because of late spring frosts.

The Utah State Fair is to be held at Salt Lake City for ten days beginning September 27 and running to and including October 6.

Western Washington is having trouble with the burning of a great many hop dryers. It is thought the fires are due to incendiarism.

It is reported that many Pacific Coast peaches have not been unloaded from the cars in Chicago but all delivered to the dump as garbage.

Farmers of Cochise and Santa Cruz Counties of Arizona recently met at Douglas and decided to organize a farm improvement association.

The Spokane Interstate Fair called out a record-breaking attendance this year. That of the first day, which is usually light, exceeded 10,000.

One farmer of New Mexico recently sold his farm consisting of six townships. With the ranch went 4000 head of cattle, the aggregate price being not far from half a million dollars.

The largest run of cattle to the Union Stock Yards, Portland, Ore., for several months was on Monday of last week when 1518 head were received. On the same day were received 2500 hogs and 1160 sheep.

The Water Users' Association, having lands under the Roosevelt Dam in Arizona, is discussing the matter of making the Roosevelt Road, which belongs to the association, a toll road in order to raise money for its upkeep.

Engineers of the federal reclamation service are surveying the Black Canyon lands in the Payette-Boise Valley of Idaho. There are 90,000 acres of land included in the district being surveyed. Settlers hope to have an irrigation district established by the reclamation service.

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Live Stock and Dairy



WEANING THE FARM COLT



TO KEEP the colt growing without interruption during weaning time and afterward is a most important consideration in producing horses

profitably. A good horseman aims to replace the milk that the colt has been accustomed to secure from its mother. He tries also to reduce the worrying and fretting of the colt to a minimum. To wean a colt appears to be a simple matter. It is simple as many do it; yet the very low degree of success that is shown on many farms by their unthrifty colts is evidence that there is something wrong or that there is something lacking. Often in a few weeks during weaning time the youngster changes from the growing, sleek, milk-fat colt to a stiff-haired and unthrifty, stunted individual. The colt if properly cared for need lose but little of his flesh, bloom and spirit.

Grain to Be Fed

Grain must be used as the milk is taken away. It is necessary that the colt have been taught to eat grain before weaning is attempted. Oats have always been preferred by horsemen for young colts. They are undoubtedly superior to any other single grain. The colt likes a mixture of a variety of grains and will thrive best on such a ration. He relishes corn and it may well be fed as part of the grain ration. It may be said that corn contains a rather high percentage of fat. True it does and so does milk which is as nearly ideal food as nature can make. Corn should not be fed alone, nor in too great quantities. Bran is a splendid feed and contains material for bone and muscle. A mixture of oats 60 per cent, corn 30 per cent, and bran 10 per cent makes a ration that will enable any colt to grow rapidly. A handful of oil meal may be profitably added. Then he will be more likely to eat enough to almost make up for the lack of milk.

Hay should be provided in plenty. Doubtless alfalfa or clover is the most desirable for young, growing colts. Both hay and grain should be of the very best quality. If it is at all possible to furnish succulent grass for the colt it should be done. This is a big factor in preventing any check in the growth of the youngster.

Company of Other Colts

Naturally the colt will miss the company of his dam. If he has been accustomed to stay in the stable or yard while the mother is out at work there will be less fretting on that account. If the youngster has followed the dam constantly and has never been kept separated from her, he should be broken gradually to stay away from her, if it is at all convenient to do so.

If there are several colts on the farm it is best to wean all of them at the same time. The youngsters love company and if there are two or more of them together, they will fret and worry less.

The stall or pen where the youngster is confined should be such that he cannot injure himself. The door and fence should be high enough so that he will not try to jump out. Nothing but a clean and comfortable place,

with plenty of sunshine and proper ventilation, should be used for the colt during weaning time. It should be made possible for the colt to exercise freely every day.

Management of the Dam

Just before weaning it is best to change the dam from succulent pasture to dry feed. If she is being fed grain, the amount should be reduced to a minimum. This will have a tendency to reduce the milk flow. The colt should then be allowed to suckle only two or three times per day instead of being with the mother all the time or at least over night. It may be necessary to milk out the mare occasionally for a few days, in the case of large milk producers and where there is a tendency for the udder to swell. Having done these things, it will be comparatively simple and easy to keep the colt away from the mother entirely without injury or handicap to either the dam or her foal.

Having made the change slowly and gradually the youngster will not miss the milk greatly. He will eat grain and hay, will take exercise and will grow without any setback. If he is kept healthy, thrifty and growthy, the very best of results will follow.—H. E. McCartney, Assistant in Animal Husbandry, Purdue University, Indiana.

CALIFORNIA CREAMERY OPERATORS ASSOCIATION

I should like to again remind your readers of the dates of the California Creamery Operators Association Convention, in San Francisco, October 28 and 30.

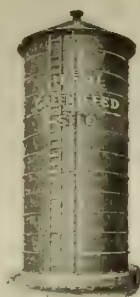
We are now working out the final details of the program and have secured some good speakers for several interesting topics. The program is being arranged so that delegates will have an opportunity to see the Exposition part of the time during the three days. The Exposition Dairy Cattle Show will be on the program during this period and will be of considerable interest to those who attend. We will have our usual Butter Scoring Contest and will arrange to have Butter Judging Contest. Friday, October 29, has been set aside by the Exposition authorities as California Creamery Operators day and we expect a large representation of creamerymen to take part in the exercises. It will be impossible for all the creamerymen in California to attend but every manager, buttermaker, helper, and any others who are interested, should plan to be in San Francisco during the full three days, October 28, 29 and 30.—L. M. Davis

SALE OF GUERNSEYS

On Wednesday, September 15th, at Florham Farms, Madison, N. J., 81 head of Guernseys were sold, which brought at auction \$43,235, this being an average of \$533.76.

While the sale was void of extreme prices, yet there were many sensational features. In several instances where two or three animals were brought into the ring and buyers offered their choice, the bidding became spirited and the person to whose lot the choice fell would take all that were put up.

The highest price paid was \$2500.



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GARGET OR MAMMITIS

Sanitation is one of the chief methods of preventing the spread of garget among dairy cows. All litter and yards should be maintained in a clean condition and disinfected periodically. The hands of the milker and also the udders of the cows should be carefully washed in an antiseptic solution before and after milking each diseased cow. It is also wise to avoid careless handling of the cows so that they are not injured. Healthy, vigorous, well-fed and carefully managed animals will often pass through infected herds without contracting the disease.

Milk from cows infected with garget should never be used for human consumption. Care should be exercised to collect this milk in a separate pail and destroy it so as to make it impossible for the germs to spread. It is always a bad practice to milk the affected quarter on the floor or on the ground, and where this is done any bedding or substances contaminated by the diseased milk should be carefully disinfected. For this purpose a solution of carbolic acid, creolin or any other commercial antiseptic should be used. Care should be taken to separate all cows that are suffering with garget from the rest of the herd, and these should be milked after the general herd, says Dr. R. H. Williams, animal husbandman, University of Arizona agricultural experiment station.

The factors causing special susceptibility to mammitis may be given as follows:

Extreme injuries, such as blows, kicks, bruises, violence, etc., may cause local or general inflammation.

Careless milking; allowing the accumulation of milk in the udder or where the milk drops constantly from the teat, thus allowing passage for the germs from the litter and other substances through the open teat.

Animals too fat.

Overstocking.

Driving with distended udders.

Exposures, such as lying on the cold ground, especially after freshening and during severe weather.

Impaired condition of the animal.

Treatment

Ordinarily the animal will overcome the disease in five to eight days of its own accord if given good sanitary attention. After this time the symptoms will gradually disappear but the yield of milk will drop below normal. On this account, certain of the best stockmen in the state recommend nothing in the way of treatment. However, either form of garget will usually respond favorably to prompt action in the early stages. The animal should be given a purgative of about one and one-half pounds of Epsom salts when first noticed. Grain in the ration should be reduced to one-third the normal amount, and a succulent easily digested food given the cow. Hot fomentations may be applied or camphorated oil or soap liniment with a little turpentine or ammonia may be rubbed gently on the affected parts. The udder should be bathed with hot water for at least twenty minutes three times a day, and, after drying, rubbed thoroughly with some warm olive oil containing 3 per cent of gummed camphor. Poultices made of bran, linseed meal, oat meal or other substances that can be placed close to the udder and that will retain their heat a considerable length of time, should be applied. The cow should be milked carefully three times a day, oftener if possible. Where

this can be done by hand, it is better than using the teat siphon. If an abscess forms, it is important that the pus be withdrawn. Some recommend bleeding the jugular in cases where the fever is high, but this is a risky operation.

FEEDING METHODS MUST BE IMPROVED

Written for the California Cultivator By Special Live Stock Contributor

"The biggest lesson that California hog raisers have to learn is that they must feed better." The speaker was a breeder of registered hogs from an Eastern state, who had visited a number of herds on the coast.

"There are as good hogs out here as there are in America and some of the best breeding; and an abundance of feeds for developing a hog to the best there is in him are at hand. Coupled with this is a climate that is about as near ideal as it could be made. The factors are all here; all that is necessary is to put them together in the right way. This puts the problem strictly up to the man behind the hog," continued our friend.

Constructive criticism is a good thing for any man or set of men, and we are grateful to our Eastern brother for his frank expression of his observations.

In a country where it is as easy to get along as in our state, we are apt to let well enough alone and not worry about things too much. Because hogs will live and make money without much care on nothing particular in the way of feed, many of us do not give them the attention we would if we lived in the East, where if hogs are not well fed they are liable to die of exposure during the long, cold winters. But this is no reason why we should not make the best of our opportunities and with all our favorable conditions produce the best hogs in the world.

STUBBLE HOGS COMING

Written for the California Cultivator

Thousands of hogs from the stubble fields of the Sacramento and San Joaquin Valleys will be coming to the markets at San Francisco and Los Angeles soon, and the market is somewhat lower as is to be expected at this time of the year.

There is good money for the grower in these stubble hogs because they are a by-product of the grain-growing business. In many places they are given very little attention at any time of the year, getting fat when there is an abundance of feed in the fields and rustling for themselves the balance of the time.

On some other ranches, however, they are now being given more care, and the hog department of the grain business made more an important issue. This is done by providing some shelter, caring better for the sows at farrowing time, dipping all of the hogs frequently in a disinfectant dip and crude oil, and keeping some feed over from season to season to feed to the hogs when they need it most.

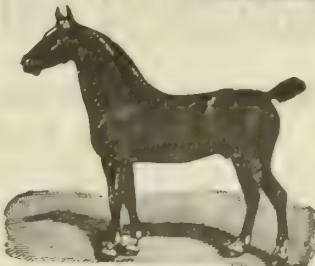
The hogs pay well for this additional care, and many grain growers have found that they are justified in making provision for irrigation from wells or some other source and planting alfalfa so that the hogs may have the benefit of this excellent hog feed.

One improvement leads to another, and as the hogs respond to the better care pure bred boars are bought, and the grading process leads to further profit.

The breeders of pure-bred hogs in California are not able to supply the demand for registered breeding stock, and this condition will probably continue for several years.

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CHEAPER MONEY

(Continued from Page 323)

dollars of property and twelve billion dollars of income would be available for one another, and they would become independent of outside assistance.

But this systematic organization of agriculture through cooperation is not possible at present in the United States, because (among other reasons) ordinary banking is not lawful for associations. The credit unions, in the seven states I mentioned, are worse than useless. Their disqualifications are: They must have share capital and cannot adopt the pure associational form; they can admit only natural persons to membership and can do nothing else but take savings and promissory notes from members; they cannot carry on any business for the collective good, join other associations formed for industrial or commercial purposes, nor invest in their stocks or bonds; they cannot discount or accept negotiable paper, while they are deprived the easiest source of funds, because they cannot receive checking deposits from either members or outsiders.

The enactment of laws to enable associations to be formed for all kinds of industrial, commercial, financial and banking objects must be procured before cooperation can be extensively used for organizing agriculture—but this is all that should be asked for. State aid would be as harmful as it is unnecessary. Artificial stimulation would weaken the vitality of any systems depending on it. In order to attain the best and most enduring results, the systems would have to be built up from within by the farmers themselves through the formation at first of the local groups. It is in the local group that cooperative credit has its freest play. The local rural cooperative banks are the basic units for creating and supporting the systems to which they belong, and they should be accorded the powers and subjected to the necessary regulations and restrictions for this purpose. A rural cooperative bank is most effective when it has the character of a neighborhood club, discards capital stock and assumes the pure associational form; for then, since it does not have to distribute dividends, its aim tends towards economy rather than gain; it can continually reduce the cost to members of its credit and other facilities, restrict its profit-takings to its absolute necessities, and use its surplus for creating the indivisible reserve that would eventually make it a substantial and permanent fixture with a large foundation in its locality. But this is not possible under existing laws for the so-called credit unions or for any other associations.

Considered from the viewpoint of agricultural organization, it will be seen that the chief purpose and value of cooperative credit is to create and support a system, so as to organize and strengthen the purchasing and selling powers of the farmers. The resources of the rural cooperative banks should be used for the collective rather than for the individual good of members, so long as there is a common need to be supplied; otherwise the spirit and practice of cooperation would both disappear together. Hence, the making of loans to members is not the primary object of a young bank and cannot be extensively undertaken until the system has been thoroughly established and a surplus accumulated in cash or cred-

it. But this surplus frequently comes all too quickly in a cooperative bank. I venture to predict that the greatest danger to cooperatives in the United States will be the facile credit and easy money made available for them. Cooperative banking is so wonderfully potent and inherently safe that, when once it is started, enthusiasm often runs away with discretion, and a tendency arises to build too fast and lend or borrow too freely.



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Cowpox

About five or six days after first dose of one ounce of tincture of iron, given in accordance with your directions of six ounces, one ounce at a time twice a week, my cow's udder broke out with sores about three-eighths of an inch in diameter, irregular in shape and near the base of the teats. Sore would break on pressure of milking and scab would form, last about a week and fall off, and other sores appear. This has continued about a month. Thinking this condition would wear off with the cessation of medicine have used only two per cent carbolated vaseline, keeping the udder clean. The trouble does not seem to diminish. Kindly suggest some course of treatment.—Subscriber, Covina.

There is no doubt that it is a case of cowpox. The tincture of iron could not cause it but might be a help to cure it. When the blisters break and the fluid that they discharge is carried on the hands to a new place it will start a blister there. No internal remedies are needed, but after each milking wash the udder with warm water; rub it dry and then apply a two per cent solution of permanganate of potash to the sores and over the parts that have come in contact with the hands while milking. It is not serious but may be quite annoying. Do not know whether that would interfere with her breeding or not.

Exercise for Bull

How much exercise should a bull have to keep him in good service condition?—Subscriber, Covina.

At least enough to keep him in good health. More is better. A half acre paddock to run in should be all right. Enough exercise to keep a male from getting fat will keep up his breeding qualities.

Deformed Lip

Horse has one side of mouth bulged and out of shape. Seems to be in lip on one side. Eye on same side is blind. Has been so nearly if not all its life. Seems healthy otherwise. Can you give me any information about the trouble or a possible cure?—Subscriber, Nipomo.

Doubtful if anything can be done for it. Probably was caused by an injury and after so long standing it would be hard to cure.

Sick Hogs

What is the trouble with my hogs? They get sore eyes, then lumps come all over their bodies which turn into sores. Some have free range while others are in small pens, but the disease seems to affect all just the same. Have not lost any but am uneasy about them.—Subscriber, Santa Ana.

There is a disease of hogs similar to what you have described that some

call measles, though not the kind that causes measly pork. They usually get over it all right, but it might be well to give each about a teaspoon of phosphate of soda in the feed once a day for a week.

Heaves

I have a six-year-old mare that about a month ago for two or three times got to a stack of damaged alfalfa hay and now has the heaves quite badly. I have been feeding her grain hay in limited quantities with rolled barley, wetting the hay. Had been feeding alfalfa hay before the heaves developed but not now. Have been giving her a few drops of oil of tar twice a day but she does not improve. Please tell me what to do for her.—Subscriber, Pomona.

Heaves is a disease that is not common in California, but musty alfalfa hay or alfalfa hay that is cut too green is liable to cause it. Get the following from your druggist: Fluid extract of stramonium, four ounces, and fluid extract of digitalis, two ounces. Mix, and give one dram every night. One dram is a very small dose but it is enough. Better get a one-dram black rubber syringe and inject the syringeful well back on the tongue.

Indigestion

Have a heifer about two years old that is due to have her first calf in about three months. The last few months she has fallen off in flesh on good feed, alfalfa and oat hay and some green corn. She does not eat or drink well. Is dull and drowsy and seems to have lots of gas on her stomach. She has been tested for tuberculosis and is supposed to be all right.—Subscriber, Chowchilla.

Probably the whole trouble is caused by some alfalfa hay having wadded up in the first stomach in so large a mass that it will not pass. The fermentation from such a mass will cause gas as you describe. Get the following medicine and give as directed: Aloin, one ounce; powdered nux vomica, two ounces; turpentine, eight ounces, and raw linseed oil, two quarts. Mix, shake and divide into four doses. Give the four doses two days apart. Also knead the stomach on the left side with your fist to help stir up the mass so it will separate and pass on. She will probably do all right after a good emptying out.

SILAGE FOR LIVESTOCK

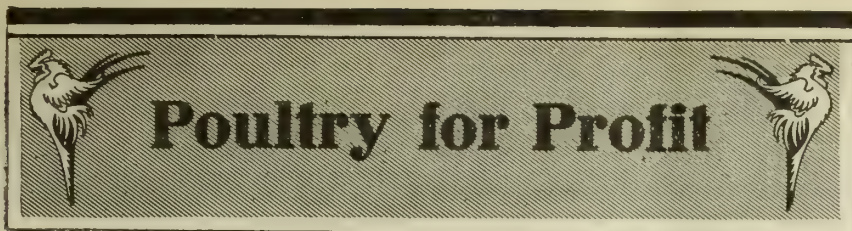
It has been found that silage can be grown and fed to livestock with good results both on irrigated and dry farms in Arizona. This feed makes a splendid supplement for balancing alfalfa hay and may be fed to horses, cattle and sheep, states Dr. R. H. Williams, Animal Husbandman of the U. of A. Agricultural Experiment Station. Where the soil is suitable for pit silos this type of structure will be found the cheapest to install; but on rocky soils and where the water table is close to the surface the above-ground type is best. Concrete, plaster, metal, wood stave and adobe structures have been used with satisfaction in the state. The object in using silos is to store a large quantity of forage in a succulent, palatable form without waste. Silage is not better food than green fodder. It is bulky and should be considered a carbonaceous roughage. On this account the best results are obtained when about 25 pounds of silage are fed each dairy cow or steer per day. Along with this there should be fed about 16 pounds of alfalfa hay and three to eight pounds of grain. This would make an excellent ration for a cow or steer weighing 1000 pounds.

CALIFORNIA JERSEY BREEDERS

The California Jersey Breeders' Association will hold their annual meeting at San Francisco, October 20.

Jerseys will be judged October 19 and 20, and a big meeting is expected.

Speakers of note are expected to aid on the program, and all those interested should arrange to be on hand.—J. E. Sharp, Secretary.



Poultry for Profit

BLACK-HEAD IN TURKEYS

THOUSANDS of turkeys have been lost recently by farmers in the vicinity of Yuma and Buckeye because of a disease commonly called "black-head," states Prof. W. S. Cunningham, assistant animal husbandman of the University of Arizona agricultural experiment station.

Blackhead or enterohepatitis is an infectious disease of turkeys caused by a microscopic organism which attacks the liver and the caeca or the blind pouches of the intestines. It is a very serious disease and in the acute form proves fatal in about 90 per cent of the cases. It is called black-head because in some cases the head of the turkey turns dark purple before death. The disease is spread by the food and water becoming contaminated by the excrement of infected turkeys.

Symptoms

Young turkeys a few weeks to a few months old are most susceptible to the disease. The trouble is not noticed until the disease is far advanced when the symptoms progress rapidly. The turkeys become dull and stupid and sit around apart from the other birds much of the time. The tail and wings droop and the feathers become ruffled. Diarrhea always sets in and the discharges are usually white or greenish yellow color. Ordinarily the disease proves fatal in from three to ten days from the time the symptoms are first noticed.

Post Mortem Findings

To determine definitely whether the disease causing death among turkeys is black-head, it is necessary to examine the internal organs. Either take a bird which has just died or kill one which is in the last stages of the disease and examine the liver and the caeca. A diseased liver will have upon its surface yellowish white spots varying from the size of a pin head to the size of a quarter. The liver is usually enlarged, is easily torn and may have darkened or inflamed portions.

The caeca are the blind pouches of the intestines. By examining the intestines closely, one will find two portions about six inches long which have no opening at one end and which are analogous with the appendix of man. These are the caeca. In a bird suffering from black-head these are greatly enlarged and thickened near the blind end. There may also be found a straw colored fluid in the tissue about the heart.

Prevention

Treatment of black-head has proven of little avail in most cases and it is therefore necessary that stringent methods of prevention be employed. It is believed that the most effective means of controlling or stamping out the disease is to kill and burn the birds showing symptoms of the ailment. Disinfect thoroughly with a 5 per cent solution of carbolic acid all feeding and watering places as well as the roosts, sheds, yards, etc. All drinking fountains or pans should be boiled for 15 minutes every few days. If they are too large to boil handily scrub them out frequently with a 5 per cent solution of carbolic acid. A

good way to prepare the disinfectant for the roosts, houses, etc., is to take 5 parts of carbolic acid to 100 parts of water and add enough lime so that when applied, it will leave the object white in color. This may be applied with a whitewash brush. For applying to the ground or runs, it is best to omit the lime and spray the 5 per cent solution of carbolic acid with an ordinary spray pump. It is also well to keep the feeding places sprinkled with dry slacked lime. Burn all litter about the yards and houses where the turkeys have been.

It is absolutely essential to remove sick birds from the remainder of the flock as soon as the illness is noted and if not immediately killed, they should be kept quarantined.

Keep the well turkeys on the move, that is, change lots every few days as this will limit the source of infection and will allow a more thorough disinfection of the old lots. A still better method is to keep putting the birds on new ground where sick turkeys have not been.

Do not throw dead birds out on the ground to decay and be a source of infection but burn on a pile of wood. In case it is not practicable to burn, bury very deeply and cover with a layer of lime to prevent dogs from digging them up.

Keep before the well birds water in which a little potassium permanganate has been placed. The proper strength for this is about one teaspoonful of potassium permanganate to five gallons of water.

Treatment

While treatment of black-head has met with little success, sulphocarbonate of zinc has proven effective in some cases. This compound is usually obtainable in five grain tablets. Dissolve six five-grain tablets in each quart of drinking water and keep before the infected birds. Successful results have also been obtained from giving each bird a small piece of a tablet about one-half the size of a sweet pea twice a day. However, it is not recommended to treat any but very mild cases.

STATE POULTRY SHOW

The first annual show of the California State Poultry Association, to be held at Sacramento, January 14 to 18, 1916, is going to be one of the biggest shows on the coast. Secretary Wilkins is getting inquiries and requests for premium lists from breeders in all parts of the state every day. He has received as many as 35 letters in one day already and the show is still four months away. The local Sacramento association is putting forth every effort possible to make the show a success in every way and all the local breeders have promised large displays, some of them as high as 150 birds.

It has been decided to have this show judged by score card so that every exhibitor, win or lose, will have something to show for his entry. From the amount of discussion indulged in lately, it appears that a big bunch of breeders are anxious to return to the score card system of judg-

ing; therefore it has been decided to give them a chance to try it out at a big show. Russell, Hinds and Luce have already been engaged to judge. Two or three other judges will be secured so that there will be no delay in getting up the ribbons.

For particulars write to C. A. Wilkins, Secretary, box 1117, Sacramento.

HENS FED BEEF SCRAPS LAY EGGS

That it is a poor policy for farmers not to feed some kind of food to their chickens which is high in protein value, such as beef scraps or sour milk, is the opinion of H. L. Kempster, associate professor of poultry husbandry at the University of Missouri.

Mr. Kempster has recently conducted an experiment which he believes proves conclusively that protein food produces greater results at lower costs.

In three separate pens the same number of chickens were kept. All were fed corn all of the time, wheat part of the time, and in addition ground grain rations of bran, middlings and corn meal. Besides this regular feed for the chickens in all three pens, those in pen one were fed beef scraps, and those in pen three were given all the sour milk they wanted. The hens were about the same age. The experiment covered the time between November 1 and June 1.

Those hens in pen two, given only the regular feed, produced only 800 eggs; those in pen one, given beef scraps, produced 1518 eggs, and those in pen three, fed sour milk, produced 1425 eggs. The hens in pen one ate 923 pounds of grain, those in pen two 944 pounds and those in pen three 836 pounds.

The amount of beef scraps fed to the chickens in pen one was 60 pounds, costing \$1.80. These hens produced 718 more eggs than those chickens fed only the regular ration. In other words, these chickens produced 718 additional eggs on feed which cost but \$1.80 more than the regular ration. Those hens fed sour milk produced nearly as many eggs as those fed the beef scrap ration.

All farm machinery must be simple and efficient in construction simply because the average farmer or farm hand could not understand the assembling and working of a more complex farm machinery.

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POULTRY

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Baby Chicks—Rhode Island Reds and White Leghorns. I guarantee safe arrival of full count of strong, vigorous chicks. I can please you if you will give me your order. Fall chicks are easy to raise and do well. J. W. Lyon, Gardena, Calif.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We recruit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

For Sale—Blue Andalusian Cockerels, \$2.50 and \$5.00, from my Chicago Prize Pen. Improve your flock with one of these fine males. Write for folder and description. J. R. Huddleston, 342 Edgeware Road, Los Angeles.

We can supply you with May hatched S. C. White Leghorn cockerels from 200-egg layers; every hen on the ranch trapped. Our aim—full value, quality and satisfaction. \$1 and \$1.25 each. HUDSON BROS., Escondido, Cal.

White Leghorn Cockerels of highest utility breeding. Order early. Breeding from our Cockerels will increase vigor and egg yield. Jos. E. Blackshaw, M.D., San Jacinto, Calif.

First-Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeye Hatchery, Turlock, Cal.

Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

For Sale—Thoroughbred Barred Plymouth Rock Cockerels ready for mating, \$3.00 each. W. E. Dietz, Corning, Calif.

Silver Spangled Hamburg Cockerels ready for mating. For sale. Eastern Blood. Tribble Nurseries, Elk Grove, Cal.

For Sale—Strictly choice White Rock cockerels. Mrs. M. A. Huddleston, General Delivery, Venice, Cal.

DUCKS

For Sale—Thoroughbred Imperial White Pekin ducklings of all ages, and young breeders from first-class selected stock. Santa Cruz Pekin Duck Farm, Santa Cruz, Calif.

Ducks, Ducks, Ducks—Few fine Mammoth Pekin and Indian Runner ducks; all ages; excellent strain. Write now. Black Bros., 455 Lucas, Los Angeles.

Muscovy Ducks—Quackless; rapid growers, light feeders and very hardy; stock and eggs. Caldwell Bros., Box 613-R, Los Angeles.

SCHOOLS AND COLLEGES

Wanted—About seventy-five young men and women to enter The WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal. 634 E. Main St.

Telegraphy—Stenography, bookkeeping, English branches. Positions guaranteed. Mackay Business College, Los Angeles.

LIVE STOCK

I have another crop of seventy-five head of BIG TYPE POLAND CHINA BOARS, born in February, sired by IOWA WONDER, who is a son of A WONDER, the GREATEST POLAND CHINA BOAR, LIVING OR DEAD. IOWA WONDER is in the 1000-LB. CLASS. One of his sons from one of my good registered sows should make YOU MONEY. I will sell the best first. On account of being overstocked will sell them at \$20 each while they last, but they will not last long at this price, so ACT QUICK if you want an EXTRA GOOD BOAR FOR LITTLE MONEY. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight, with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Del Dayo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Beeding. BERKSHIRE HOGS. Finest Lard in the state. All ages for sale. A. B. Humphrey, proprietor. Mayhews, Sacramento Co., California.

Cattle Instruments of every description at the right price to be had at O. J. Weber Co., manufacturers and importers of Machinery, Silos and Appliances for the Dairy and Creamery, 759 So. Los Angeles St., Los Angeles, Cal.

For Sale—Pedigreed Thoroughbred Duroc Jersey Hogs, Gilts open or bred, weaned pigs \$15.00 each. S. C. Rhode Island Cockerels, Flemish Giants, New Zealand Reds, Belgian Hares. John Kincaid, P. O. Box 151, Bakersfield, Cal.

Thoroughbred Poland China Boars of large type for sale. Buy at home and save express. Prices reasonable. For further particulars write to Maywood Colony Nursery, Corning, Cal.

For Sale—Registered, Berkshires. 25 choice pigs of best breeding from the best strains in America. For prices and description address H. L. Murphy, Perkins, Sacramento Co., Cal.

Blue Ribbon Herd Duroc-Jersey Hogs. Service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F., 1915, prices. John P. Dages, Modesto, California.

DUROC JERSEY BOARS. Trios of boar and sows not akin of the best blood lines at reasonable prices. Write me. L. L. DeYoung, Sheldon, Ia.

For Sale—At all times, Jacks and Stallions driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Poland Chinas—200 head fine individuals, weanlings to eight months. Satisfaction or money refunded. Geo. V. Beckman, Lodi, Cal.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Novato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

28 Springing Holstein Helpers and Registered Bull—fine milk strain. \$1500.00 takes them. E. H. Webb, Escondido, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Ricconi Bros., Mountain View, Cal.

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Wanted—Orchard ranch to work or manage. Have made it a life work and study. You furnish equipment and I will do the rest. Have wife; no children. References furnished. Geo. H. Osgoodby, 610 San Gabriel Ave., Azusa, Calif.

Wanted—Home in country for 10-year-old orphan boy. Is well trained, industrious, bright, strong and quiet. Needs a mother's and father's interest. Will adopt to right people. H. H. Eshelman, Soldiers' Home, Cal.

Wanted, good farm land in exchange for income property. J. H. Wood, 422 Van Nuys Bldg., Los Angeles, Cal.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

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Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckebers Press, 237 Franklin St., Los Angeles.

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The owner of 3000 acres near Madera desires to subdivide for real settlers; the land is typical San Joaquin valley loam, free from alkali, and will grow anything; railroad crosses property and there is abundant water at shallow depth; the land is for sale at the right figure to people with proper qualifications; no cash payment down and terms to suit, provided the purchaser has sufficient money to put the land under water. Remember that there are no real estate commissions to pay to swell the price of the land; all the owner wishes is interest on his money. No real estate agents need apply.

GREENE ESTATE COMPANY, 207-208 Berkeley Bank Building, Berkeley, Cal.

For Sale—14 acres, one mile from the business center of the city; all improved; modern bungalow, good barn, tank and windmill, chicken house, brooder house and pens. Fine opportunity for raising chickens; 11 acres in alfalfa, family orchard, berries, etc. Address, Mrs. Anna Stromwall, R. F. D. No. 2, Box 8, Merced, Cal.

Good Government Land relinquishment of 160 acres for the price of the improvements and work done; house, barn, fencing, fine climate, wood and water, \$650 cash. W. Wallace Baldy, Raymond, Madera Co., Cal.

Cheap—Six acres Blue Gum Eucalyptus, El Cajon valley, county of San Diego, near railroad; trees over 3 years old; price very reasonable; must sell immediately. Further information, price, write A. P. Schummers, 100 N. Franklin, Austin, Minn.

State Map Showing School Land in different counties of the State, plainly marked, \$2.50. County sectional maps, showing vacant U. S. Land, plainly marked, \$2.50 each. Order TODAY. Booklet, FREE. Joseph Clark, Sacramento.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale or Exchange for Southern California acreage, 4 acres fine bulb or vegetable land in city of Santa Cruz. William Richard, owner, 438 River St., Santa Cruz, Cal.

SEEDS AND PLANTS

Our "West Coast Seed Store" has been leased over our heads and we don't want to pay Los Angeles high rents. A good, well posted Traveling Seed Man said he wished he could buy our stock and move it to another town where there is none, the best opening he knew of for a good Seed Store, and we agreed with him. Could also swing there most of our Mail Order business. Our stock and fixtures are for sale at a big bargain. We also sell Poultry Supplies and manufacture Poultry Foods and Proprietary Articles at a good profit. Would accept good clear real property for all or part of the same. This is a good chance for someone, but demands QUICK ACTION. Might sell part to real good party and retain part interest. But I have other business that takes most of my time. Come and see me or write me here at once and I will arrange to see you. T. S. Tompkins, 116 E. 7th St., Los Angeles.

Best, Cheapest Forage for poultry, cattle, hogs. Get our prices. Plant now. LUTHER BURBANK SPINELESS CACTUS PLANTATIONS, SAN DIMAS, CAL. Covina phone 902.

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs, \$8.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co., Cal.

Tepary Beans For Sale—I have a limited amount I will sell for 6 cents. F. O. B. Redlands. Buy your seeds while they are cheap. Planting time this year they sold for 22 cents. A. B. Ward, Yucaipa, Cal. Peruvian Alfalfa Seed—Hairy varieties, also Algerian wheat. S. P. Huss, Yuma, Arizona.

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"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco

PUBLIC SECURING RIGHT TO ROAD

(Continued from Page 317)

last two years as a shortcut to a neighborhood settlement about three miles from my ranch. I do not want to fence this portion of my land until I am ready to fully develop it, neither would I care to inconvenience unnecessarily or prematurely the traveling public until I am compelled to do so in order to hold title to the road in question.—Subscriber, San Francisco.

The method adopted from time immemorial to avoid the ripening into title by prescription of a right-of-way, is as follows: On one or two days of each year the owner of the land bars the road and refuses to allow anyone to pass except by permit granted by the owner.

Commuting On Homestead

Can one prove out at the end of 14 months by paying a dollar and a quarter an acre, or did the new

three-year law do away with that?—Subscriber, Oakland.

The right to commute upon homestead entry upon payment at the expiration of 14 months' residence is retained. The only exception being that as to lands taken up under the act providing for the entry of additional lands, the right to commute does not apply.

Buying Realty On Contract

I am buying a piece of property on a contract. When I have paid more than one-half of purchase price I am to get a deed. My next payment will make more than one-half of the price and the seller says it will cost me a good deal to get my deed as I must pay for the title certificate. Can I get a Torrens title without having a certificate from a title company?—Subscriber, Downey.

It is very probable that it would cost you more to obtain a certificate under the Torrens act than a good title company would charge you. It is also more than probable that the duty is not upon you to pay for the certificate, but is upon the party who is selling the land to you, as it is almost invariably the rule that the vendor pays for certificate showing title in the vendee, although the vendee may be required to pay a portion of the escrow charges, which are but nominal, however it is to be understood that this is governed by terms of your contract.

Forged Name on Note

On October 22nd, 1913, B. forged A's name on a note for \$100 on a bank, getting C's name also on it by saying A. had signed it. When A. heard of it he went to the bank and told them it was a forgery. A. died January, 1915, all his property having been deeded seven years before to his wife. The bank is now trying to collect. Twenty dollars has been paid on principal and C. says he will pay \$40 if A's wife will do likewise. Can the bank collect from her under those conditions and what would it cost to fight and try to show it was a forgery? There are about 60 signatures could be produced. And are banks allowed to loan money without seeing the notes signed?—Subscriber, San Diego.

A having died, in order to obtain any judgment upon any obligation it would be necessary to have an administrator appointed as service cannot be made upon a dead man. The administrator being appointed a claim duly verified would have to be presented to the administrator and upon the refusal of the administrator or of the judge, suit would then have to be brought thereon. The judgment could only run as against the property or the estate and if the man when he died did not have any property, no satisfaction could be obtained. The expense would therefore be entirely upon the bank, as the wife of the deceased man is not in anywise liable and the expense incident to the collection would in this case be so large as to be an absolute deterrent on any attempt of collection by the bank. There is no requirement that an officer of the bank should see a note signed.

Responsibility for Partnership Note

Three men enter into a partnership and borrow a sum of money. One partner, a single man, dies and his estate is settled out of court, without settling his part of this note. The business venture is a failure. Would the settlement of the estate invalidate this note, and how long a time would the holder of this note have before it would be outlawed.—Subscriber, Covina.

An estate cannot be legally settled otherwise than by being administered through the courts. In order to enforce any claim other than one that has been specifically secured, as a mortgage, it is necessary to obtain an administration upon the estate. A note outlaws four years after date upon which it is due, unless there has been an acknowledgment of the debt in writing within that time.

The record has been broken by the packing house of the California Fruit Canners' Association at Visalia which has just closed the season with an output of 175,000 cases.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Curing Pampas Plumes

Please give information regarding curing of pampas plumes.—Subscriber, Chino.

The best answer we have found is written by Joseph Sexton of this state for Bailey's Cyclopaedia of Horticulture, published by the Macmillans, N. Y. He refers to the fact that the growing of pampas plumes is not as profitable as it was at one time and gives other information regarding the plant as to curing. Mr. Sexton says:

"The appearance of the plumes is a signal for great activity among those who have large fields. The grass should be so trimmed early in September, before the plumes appear, that each hill will be easy of access. Young plants ripen their plumes two or three weeks earlier than old ones, and some varieties are earlier than others. It requires exercise of judgment to pick the plumes at the proper time. They are generally ready when they are exposed from the husk a few inches and have a fluffy look. It is well to try a few at this stage, and if they cure well at the stem end when dry, they are all right, but if they do not become fluffy at the stem end they have been picked too young. If the plume looks dark and seedy at the top when cured, it was too old when picked. Some varieties, especially those producing very long plumes, should be allowed to remain somewhat longer on the plant than those of the short-plumed varieties. By trying a few of each variety, the time of ripening can soon be ascertained. Some varieties are pulled from the husk in the field; others have to be hauled to husking benches, where the husk or sheath is removed. Some planters husk them like corn; others use a knife set in such a way as to split the husk without injuring the plume. When the husk has been split, a quick jerk or strike on the table will extract the plume. The plumes are then taken to the drying ground and evenly spread in long rows. This ground should be made smooth and free from any trash that is liable to adhere to the plumes. Clean stubble ground is the best. The plumes are left on the ground three days and two nights to cure, and are turned and shaken once each day. They are next packed away as broadly and smoothly as possible on shelves in a dry building, where they should lie ten days or two weeks, or until the stems are thoroughly dried, at which time they are ready for market. They are packed in two grades: The first class, having plumes 26 inches long and over, clear of stem (sometimes as long as 45 inches); in second-class stock the plumes are 17 to 26 inches long, clear of stem. If shipping by express, the writer uses bales of about 2000 plumes covered with canvas or burlap, and some light strips of wood at the corners. If the plumes are packed smoothly and evenly they will withstand heavy pressure. Careful, all-round cultivation is necessary to produce good plumes."

Crossing Leghorns and Minorcas

What will be the result of a cross between White Leghorns and White Minorcas, where good layers only are desired, and how should one proceed to get best results with such a cross?—Subscriber, Holtville.

We do not believe there is anything to be gained by crossing breeds. In fact, we believe the danger is great that a strain may be produced which is lower in production than either of the parents. However, we know many poultrymen have thought otherwise. We recall well that years ago one poultryman persisted for many years in crossing Brown Leghorns on Barred Rock hens. The following year he secured pure-bred Barred Rock roosters, changing back and forth each year. He maintained that he got harder stock, but at best these are only mongrels and do not give the satisfaction in handling nor do we think as much profit as the pure breeds.

Trees Per Acre

Please give information regarding different systems of setting out orchards and of determining the number of trees per acre, planted say 40 or 45 feet apart.—Subscriber, Alhambra.

The matter of general tree planting is touched upon in our issue of February 11, 1915, and will be given again perhaps in December, when the planting season will be on. To answer more directly our subscriber's inquiry, if trees are 40 feet apart there are required 27 trees for each acre; if 50 feet apart, it will require 17 trees per acre; 30 feet apart, 48 trees per acre; but to enable our inquirer to determine for himself, will say there are 43,560 square feet per acre and if trees are set square and say 20 feet apart, there are 400 square feet required for each tree; that is, 20 by 20 makes 400 square feet. Now then, to determine number of trees required

for the acre, divide 43,560 by 400 and the result is 108 trees. By using this rule, no matter what the distance apart or whether the same distance prevails each way of the field, this rule will work.

Oily Butter

I recently bought a fine looking cow claimed to give six gallons per day. It was promised that she was to be fresh in April or not later than the first of May. Found her gentle and an easy keeper but she failed to come fresh as claimed. Though we dried her off she did not freshen until September. The calf died within three days. The milk became good at eight milkings. Am giving baled alfalfa, two quarts of beet pulp soaked and three pints of "sure-milk" and a pint of cottonseed meal, with salt before the cow constantly. Also feed cow pumpkins, carrots or beets at noon. The butter comes more like oil than butter. Have tried all temperatures. The only way we can get any butter is to work in ice water. In addition the cow gives less than four gallons.—Subscriber, El Cajon.

Dr. Leroy Anderson replies to the inquirer as follows:

"Possibly feeding more cottonseed meal will so harden the butter fat that the churning will be made more simple. Cottonseed meal has a tendency to increase the hardness of the butter and it may be fed safely up to at least four pounds per day. The results of some experiments in feeding at the South Carolina Experiment Station indicate what may be expected. When 10 pounds of wheat bran were fed with 45 pounds of corn silage, the melting point of the butter fat was 92.9 degrees. When six pounds of cottonseed meal were fed with 45 pounds of corn silage, the melting point of the butter fat was 98.6 degrees. When six pounds of linseed meal were fed with 45 pounds of corn silage, the melting point of the butter fat was 91.5 degrees.

"This shows that cottonseed meal has the faculty of making a much harder butter than linseed meal or bran. However each of the above three feeds were given in excess amounts in these experiments, i. e., more than one would want to feed as a daily practice. It would pay the subscriber to experiment on his feeds, using alfalfa hay, beet pulp and cottonseed as a basis

and try supplements with other available feeds, such as the roots and pumpkins and also oat hay and rolled barley for instance. In churning be sure that the cream is well ripened and do not add any sweet cream less than twelve hours before churning. It may be that the cow has a habit of producing a very oily fat, in which case there may be no cure. One can merely experiment, knowing that cottonseed meal, grain hays, rolled barley, etc., have a tendency to make hard fat."

Soil Analysis

Please give information how to make a complete analysis of soil, also for the content of humus, potash, phosphoric acid and alkali.—Subscriber, Santa Ana.

The best procedure would be a course in chemistry in some educational institution. In case of inability to take such course it is possible one might secure information through a correspondence course. In any case, laboratory equipment would be necessary. Soil analysis is a very complicated process and even when made by the expert who understands his business is often unintelligible to the layman. On this point we quote from Fertilizers and Crops by Van Slyke: "Usually a soil analysis is made by treating a sample of soil with a dilute acid; it is supposed that the amounts of plant-food constituents thus dissolved approximate the proportions that are more readily available for the use of plants. When these results are compared with actual crop growths on the field from which the sample of soil analyzed is taken, wide discrepancies often occur. The actual value of soil analysis in determining positively and definitely the plant-food needs of a soil has been and is still a matter of dispute. All agree that the results of soil analysis are negatively helpful in enabling one to reach conclusions, when it is shown that the total amount of any plant-food constituent is present in very small amount or wholly absent. However, there appears to be no general agreement as to what shall be regarded as the lowest amount of any particular plant-food constituent calling for special addition to meet crop growths."

Close observation of soil, especially as to its physical condition is valuable, and there are times when the advice of an expert is necessary. Possibly in time we will need the soil doctor or chemist to prescribe.

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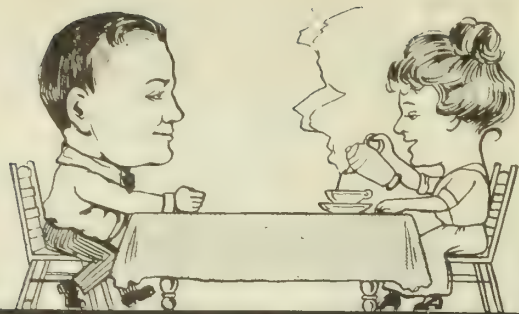
This tractor materially reduces the cost of plowing, harrowing, seeding, harvesting and hauling. The creeping principle provides more than five times the tractive surface obtained with the wheeled tractor. The bearing surface on the ground is wide and long and keeps the tractor on top of the ground and does not pack the soil or bury itself.

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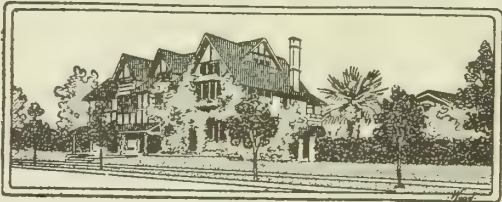
In ½-lb., 1-lb. and 3-lb. hermetically sealed cans. There's a double economy in buying the 3-lb. can.

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The Household Department



GOD OF THE OPEN AIR

From the prison of anxious thought
that greed has builded,
From the fetters that envy has
wrought and pride has gilded,
From the noise of the crowded ways
and the fierce confusion,
From the folly that wastes its days in
a world of illusion,
(Ah, but the life is lost that frets and
languishes there!)

I would escape and be free in the joy
of the open air.

By the breadth of the blue that shines
in silence o'er me,
By the length of the mountain-lines
that stretch before me,
By the height of the cloud that sails,
with rest in motion,
Over the plains and the vales to the
measureless ocean,
(Oh, how the sight of the greater
things enlarges the eyes!)

Draw me away from myself to the
peace of the hills and the skies.

By the faith that the wild flowers
show when they bloom unbid-
den,

By the calm of the river's flow to a
goal that is hidden,

By the strength of the tree that clings
to its deep foundation,

By the courage of birds' light wings
on the long migration,

(Wonderful spirit of trust that abides
in Nature's breast!)

Teach me how to confide, and live my
life, and rest.

—Henry Van Dyke.

A RIDE WITH XERXES



WOULDN'T you like to take a
little ride with Xerxes this
morning?"

The speaker was Mrs.
"Cap'n" Bryce Hodgkins,

who was pouring coffee at the break-
fast table; the person spoken to was
her husband, who had returned only
the night before from a voyage; and
the person or thing spoken of was a
certain roan horse that the captain,
who perhaps was not so well versed
in equine as in maritime matters, had
purchased just before leaving home.
The time was early fall, and the scene
was laid in a pleasant, roomy house
of the colonial type, that overlooked
the sparkling waters of a bay.

"Lucy thinks that she must go home
this morning," Mrs. Hodgkins con-
tinued, nodding toward an elderly
lady, seated at the table, whose face,
although lacking the captain's master-
ful look, nevertheless proclaimed her
his sister, "and I thought that you
might like to take her over, and then
keep on to Bayport and do an errand
or two."

"What kind of a horse has he turned
out to be? Given you any trouble?"
asked the captain, postponing his
reply.

"Oh, none to speak of. Xerxes isn't
a vicious horse, but he is a little no-
tional, and he likes to have his own
way. Just give him a slack rein and
humor him a bit, and I think you will
get along with him very well. I've
driven him almost every day while
you have been gone."

The captain, who was known as a
disciplinarian on shipboard, laughed a
little grimly. "I don't know much
about humoring," he said, "and I
rather prefer to have my way."

"Well, I guess nobody that knows
you will dispute you there, Bryce
Hodgkins," said his sister, but not
aloud.

Miss Lucy often lacked the courage

to give audible expression to her
views, but on such occasions she had
a habit of relieving her feelings by
being particularly plain-spoken—un-
der her breath.

She exercised that privilege an hour
or two later that morning, while driv-
ing with her brother along a quiet
road, sweet with woodsy odors and
the breath of the sea.

"I suppose you've come back," so
her thoughts ran, "just as set against
poor Laura and her husband as when
you went away. And without the least
sense or reason, either! Why
shouldn't Laura marry a fine young
man like George Willard if she want-
ed to, even if his father and hers did
have a falling out years ago? She
was of age, and knew her own mind.
And suppose you did say, first off,
when you got home from sea that time
and found out what had happened,
that you would never show your face
at the Willard place or have anybody
of the name come to yours—isn't a
bad promise better broken than kept?
It's just your pride and obstinacy
that's making your daughter and your
wife suffer—and yourself, too, for that
matter. I've a good mind to tell you
right out loud just what I think of
you!"

But when she really found her voice,
it was only to say, quite timidly,
"Laura's baby looks an awful sight
like you, Bryce."

The captain made no reply, but to
the horse he said sharply, "Get along,
will you!" and struck him with the
whip.

This action Xerxes promptly resent-
ed. He did not exactly kick, but he
lifted his hind feet in a highly disre-
spectful manner, and switched his tail
over the reins, causing them to drop
from the captain's hands.

"Oh, you mustn't whip him, Bryce!"
exclaimed Miss Lucy, in alarm. "He
won't stand that. When Rachel wants
him to go faster she does like this,"
and pursing her lips, she produced a
sound that caused Xerxes to move at
a somewhat accelerated pace until he
reached a considerable ascent in the
road.

Here he stopped and looked back
suggestively. "He always does that
when he comes to a hill," Miss Lucy
explained. "He expects somebody to
get out. Rachel always does, to please
him, and then she generally gives me
the reins and climbs into the back of
the wagon herself, and drives up the
hill that way; and Xerxes seems to be
perfectly satisfied. I am hardly spry
enough for that, but I would just as
soon walk up the hill."

"You'll do no such thing," said the
captain. "Go along, you old rascal!"
he shouted, reaching for the whip.
"Or," he added, as the horse remained
stationary, "I don't know but I'd just
as lief walk up the hill. I believe I'd
like to stretch my legs. But if he sup-
poses I'm going to do it every time,
he'll find his mistake."

The hill surmounted, all went well
until, at a turn of the road, an auto-
mobile came in sight. Again Xerxes
stopped, and at once began frantic
demonstrations of disapproval.

"He doesn't like those things," said
Miss Lucy, "and I don't blame him.
Just wait a minute!" she called to the
driver of the car, who had also
stopped.

"Now, Bryce, we'll have to get out;
and you take my shawl and put it
over his head, and lead him by. That's
the way Rachel did the other day, and
it worked."

This advice was at first not at all
well received. But the captain, who
would never have quailed before a
mutiny on the high seas, was becom-
ing a little afraid of Xerxes; and be-
ing unable at the moment to think of
anything better to do, he finally blind-
folded the horse in the manner sug-
gested, and led him safely past the
object of his dislike.

"Those people laughed!" said Miss
Lucy, indignantly, as she resumed her
seat in the wagon.

"And well they might!" roared the

captain. "I'll never be caught in such a ridiculous performance again!" He jerked the reins.

At this, Xerxes broke into a gentle canter that soon became a gallop.

"Don't pull on him!" cried Miss Lucy. "You want to drive him with a slack rein, just as Rachel said."

But the captain, bracing his feet, only pulled the harder, while the horse dashed on in his mad career.

They were now approaching the old Hodgkins homestead, where Miss Lucy, since the death of her father, the old captain, dwelt alone, and it certainly seemed that she would be carried by.

But Xerxes, apparently thinking that the joke had gone far enough, came to a stop opposite her gate so suddenly that the occupants of the wagon were almost thrown from their seat.

"I'll sell that horse, or give him away, before I sail again!" declared the captain, as he assisted his sister to alight. "He's altogether too cranky for a woman to drive."

"Now Rachel doesn't have a bit of trouble with him," protested Miss Lucy; "but then, Rachel always was quite a manager."

"And the land knows she's had experience," she added, as her brother drove away. "Xerxes isn't the only cranky creature that the poor woman has had to deal with."

Meanwhile Xerxes was jogging peacefully along at a gait of his own choosing, while the captain, holding the reins loosely in his hands, was considering another task that would presently confront him. In the course of his journey he would soon come to the Willard place; and it was his purpose to drive by it looking straight ahead, with all the cool indifference of a perfect stranger; but he was beginning to realize that this might not be altogether easy, considering how his eyes were aching for the sight of a face that he loved.

However, he shut his teeth together firmly, and just before he reached the lane, some two hundred yards in length that led up to the Willard house, he turned his head and surveyed the landscape on the other side. Xerxes, on the contrary, turned his head toward the house, and suddenly veered into the lane with all the lively interest of a horse that is homeward bound, with rest and refreshment near at hand.

"Whoa, back!" called the captain, tugging at the reins. Thereupon Xerxes, simply increased his speed, not seeing fit to obey the command until he had conveyed his passenger in fine style to the front door.

Thus Capt. Bryce Hodgkins, in spite of his vow, was a visitor at the Willard place, and, as it seemed, a very welcome one; for a young woman rushed out of the house and threw her arms round his neck, just as she had done many a time in the days gone by.

"You couldn't stay away from me this time, could you, father?" she cried, joyfully.

"No, I couldn't seem to," he replied, submitting himself, not altogether ungraciously, to her embrace.

"Now come right in, father," said the young woman, still clinging to him. "Baby is asleep, but you don't need to be quiet. I want him to wake up, anyway." And the captain, somewhat dazed in mind, but strangely light of heart, entered the house, leaving Xerxes contentedly nibbling the grass by the door.

Miss Lucy, after her brother's departure, had been struck by a thought; without even stopping to remove her bonnet, she had seized the spy-glass that had been her father's property,

and ascended to the attic, where she could command a view of the road past the Willard place. She witnessed her brother's entrance into the lane, although she could not see what occurred at the door. But after watching in vain for his return to the road, she drew conclusions that brought a knowing smile to her face.

"Yes," she said, with a sigh of satisfaction, as she laid down the glass, "I always maintained that poor Rachel was quite a manager."

IDEAS FOR THE COOK

Written for California Cultivator
By Isabel Cottle

Breakfast

Rolled Oats with Raisins . Cream
Scrambled Eggs Pop-Overs
Quince Honey Coffee

Lunch or Supper

Beef Croquettes Baking Powder Biscuit
Egg and Lettuce Salad
Baked Apples with Cream Doughnuts
Tea or Milk

Dinner

Delicious Chicken, Mashed Potatoes
Okra, Drawn Butter Sauce
Cabbage Slaw
Angel Cake Snow Pudding
Coffee

Delicious Chicken

Cut up a good chicken as for frying, then soak it in salted water for twenty minutes, rinse and spread in a pan, being careful not to pile up the pieces. Cook in a hot oven, keeping in the pan just enough water to prevent drying out. When it begins to get tender, turn the pieces over, dot plentifully with butter, sprinkle with pepper and put back in the oven until brown. Place the chicken on a platter of hot toast. Thicken the juice with a little cornstarch or flour, pour in one cup of milk or cream and bring to boiling point. Add the giblets cut up, and four hard cooked eggs chopped fine. Pour over the chicken.

Cabbage Slaw

Choose cabbage that is crisp and tender. With a sharp knife shave in long thin shreds. Place in granite kettle with just enough water to keep from sticking and steam 10 or 15 minutes until slightly tender but not soft. Season with salt, white pepper and a level tablespoon of sugar. Then add two beaten eggs and half a cup or more of thick cream, either sweet or sour. Let boil up, remove from fire and when slightly cooled add vinegar to taste.

Angel Cake

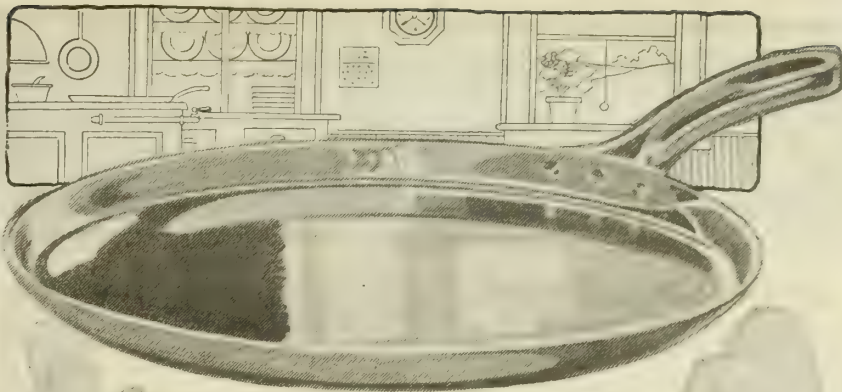
Whites of five eggs, half teaspoon vanilla, half teaspoon cream of tartar, two-thirds cup granulated sugar, half cup pastry flour. The secret of success in making angel cake is to have the eggs fresh and very cold, to beat as little as possible and to bake slowly. Prepare everything before breaking the eggs. Grease a tube pan. Sift the flour and sugar together three or four times. Beat the whites of the eggs a little, add the cream of tartar and beat until absolutely stiff; then add the flour and sugar mixture, a tablespoon at a time, sprinkling it on the eggs lightly and mixing very gently. Flavor and pour in the pan. Bake half an hour in a rather slow oven. The batter ought not to be thicker than boiled icing.

Pop-Overs

Heat iron gem pans or pop-over cups in the oven until thoroughly heated through; butter well, and fill one-half full of the following mixture: One cup flour, sifted with ¼ teaspoon salt; add very gradually ¾ cup of milk, and then 2 well beaten eggs; beat with an egg beater 2 minutes. Bake in a moderate oven 30 to 35 minutes.

Quince Honey

Quince honey is a delicacy that must be made in small quantities. Pare and grate three large quinces, add three pints sugar, and two pints water; place in a vessel and boil from 20 to 30 minutes. The grated fruit should remain in small particles and the sugar and water form a jelly. Put in glasses and cover with paraffin.



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Karo
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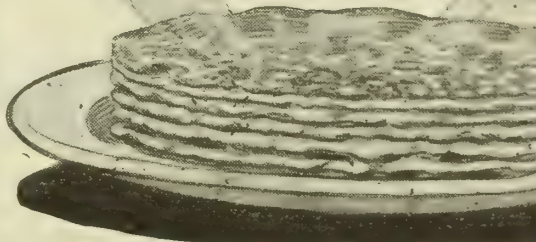
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San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, Sept. 29, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:

Arizona Daisies14½
Arizona Longhorn17½
California Fresh15
Cheddar20@21
Domestic Swiss19@20
Eastern Daisy18½
Imported Swiss40
Longhorn17@17½
Oregon Triplets14½@16
Tillamook15½@16

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts37
Candled39@41
Northern Fresh Extras, f. o. b. S. F. 40

Prices to producers:

Hens, lb.13@17
Roosters, old9
Broilers, lb.22
Fryers18
Roosters, lb.18
Turkeys16@18
Ducks14
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7.00
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:

Sweets, yellow, lug50
Merced, cwt.1.50@1.60
Idaho Rurals1.15@1.20
Idaho Russets1.20@1.30
Northern Burbanks1.20@1.40
Shimas1.35@1.40

ONIONS

Wholesale selling price:

Boiling Onions, lug1.00
Pickling, lug1.25
Brown, cwt.1.10
White Globe, lug75
Garlic12
Sets, White and Brown, lb.10

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax5½@6
Limas5½@6
Green5½@6
Cabbage, sack90
Lb.1½
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.50@75
Chicory, doz.40
Chives, doz.1.00
Corn, lug55@60
Cucumbers, lug40@45
Pickling, lug1.00@1.50
Egg Plant, lb.3@3½
Escarole, doz.40
Horseradish, lb.15
Leeks, doz.40
Lettuce, doz.25
Crate1.10
Mint, doz.40
Okra, lb.4@5
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone7@7½
Peppers—
Bells3½@4
Pimientos6
Rhubarb—
Crimson Winter, box75
Strawberry75@85
Spinach, doz.20
Squash—
Crookneck, box40
Hubbard, lb.1½@2
Summer, lug40@45
Tomatoes—
Lug45@50
Turnips40

FRESH FRUIT

Wholesale selling price:

Apples—
Bellflower80@1.00
Fall Pippins75@85
Greenings90@1.00
Jonathans1.75@1.90
Pearlains, Red90@95
King Davids2.00
Crabapples, box1.50
Bananas, lb.4
Berries—
Strawberries, basket5@10
Blackberries, basket5@6
Raspberries, basket10@14

Cantaloupes—

Paul Rose, crate1.15@1.25
Columbia, large crate1.50
Pineapple, crate1.25
Casabas, crate1.50
Figs—
Black65@75
White65@75
Grapes—
Black Hamburg, lug75@85
Malagas, lug75@80
Morocco1.25
Muscats, lug75@80
Concord, crate1.10
Tokay, lug1.00
Cornichon, lug1.00
Red Emperor, lug1.00
Guavas, lb.6
Peaches—
Clings, box50@60
Freestones, lug50@60
Elbertas, lb.1½@2
Pears, Bartlett, box75
Prunes, Italian and German1.25
Pineapples, lb.5
Quinces, lug45@50
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons1.25@2.25
Juice Lemons75
Grapefruit, Seedless4.00
Seedlings3.00
Limes, basket1.00
Valencias4.50@5.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, boxes8@9
Apricots9@10
Peaches5@7
Pears, lb.11
Prunes, fancy pack8@12

NUTS

Walnuts—

New quotations to be made by Association this week.

See almond quotations by Association under San Francisco.

Peanuts—
California, Raw6
Japan5½@6
Eastern7@7½
Chinese5

HONEY

Wholesale selling price:

Comb, Fancy, Water White15@16
White15
Extracted Water White7½@8
White7
Light Amber6
Beeswax25@26

RICE

Wholesale selling price:

California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:

Limas5.35
Lady Washington5.25
Pinks4.50
Black Eyes4.50
Lentils12.50
Small White5.00
Garbanzos7.50

HAY

Prices to producer f. o. b. Los Angeles:

Barley Hay12.00@14.00
Wheat Hay10.00@13.00
Tame Oat12.00@16.00
Alfalfa10.50@13.00
Volunteer5.00@7.00
Straw4.00@5.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow2.20
Corn, White2.30
Wheat2.00@2.05
Oats, White1.80
Oats, Hulled2.25
Egyptian Corn2.10
Kaoliangs1.60
Barley Seed1.55
Barley, Hulled1.90
Kafir1.85
Milo1.75
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles.

Bran, Heavy1.70
Alfalfa Meal1.15
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.00@3.10
Beet Pulp1.20
Cracked Corn, cwt.2.25
Cracked Wheat, cwt.2.15
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.50
Rolled Oats1.85
Middlings2.00
O. & W. Middlings1.80
Feed Meal2.30
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Market

SAN FRANCISCO, Sept. 28, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fresh Extras25½
Prime Firsts24½
Firsts24

CHEESE

Wholesaler to retailer.

Young America13½
California Flats12@14½
New York Cheddar19
Oregon Twins13
Oregon Young America, fancy14½

EGGS AND POULTRY

Unexpected firmness obtains in the egg market and prices are the best of the year.

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh, Extras40
Select Pullets35½
Hens, lb.13@17
Fryers23@25
Broilers25@28
Roosters—
Young22@25
Old8@10
Squabs2.50@3.00
Turkeys17@25
Ducks12@15
Geese11@15
Belgian Hares—
Live Weight7@9
Dressed12

LIVE STOCK

San Francisco prices, gross weight:

Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@9
Hogs4@7¼
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7@7¼

POTATOES

Wholesale selling price:

Salinas Burbanks, cwt.1.25@1.65
Delta Burbanks, cwt.50@1.00
Sweets1.50@2.00

ONIONS

Wholesale selling price:

Onions, cwt.40@60
Garlic6@8

VEGETABLES

Wholesale selling price:

Beans—
String, lb.1½@2½
Limas, lb.1½@2½
Wax, lb.2@2½
Celery, doz.25@30

WEATHER CONDITIONS

For the Week Ending September 25, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date
Eureka	.02	.30	1.02
Red Bluff	.00	T	.57
Sacramento	.00	.01	.25
San Francisco	.00	.01	.18
San Jose	.00	.04	.28
Fresno	.00	T	.13
Independence	.02	.10	.09
San Luis Obispo	.00	.01	.35
Los Angeles	T	T	.01
San Diego	.00	T	.01

Temperature Data

—Past Week—

	Maxi-mum	Mini-mum
Eureka	64	48
Red Bluff	94	56
Sacramento	94	52
San Francisco	76	52
San Jose	84	44
Fresno	98	54
Independence	90	40
San Luis Obispo	84	48
Los Angeles	86	58
San Diego	76	60

Corn, sack75@1.10
Cucumbers, lug20@35
Eggplant, lug40@60
Okra, lug20@35
Peppers—
Bell, box40@50
Chili, Mexican, lug30@45
Squash, Summer35@50
Tomatoes, lug35@55

FRESH FRUIT

Wholesale selling price:

Apples—
Alexanders75@1.00
Bellflower60@90
Gravenstein70@1.10
Bananas, Hawaiian, bunch75@1.25
Blackberries, chest4.25@5.00
Cantaloupes—
Delta, lugs25@45
Turlock Ponies50@60
Turlock Standard75@85
Figs, box, single layer, black35@60
White25@40
Grapes—
Tokay, crate50@75
Malagas, crate55@60
Muscat, crate50@65
Wine Grapes, ton11.00@14.00
Huckleberries, lb.4@6
Nectarines, Red, crate50@75
Peaches, Salways, wrapped15@40
Lugs35@50
Pears1.00@1.50
Pineapples, doz.1.25@1.75
Plums, crate65@80
Prunes, crate1.00@1.25
Pomegranates, small boxes50@1.00
Quinces, box40@70
Raspberries, chest5.00@7.00
Strawberries, chest3.00@6.00
Watermelons, doz.1.00@2.50

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50@4.00
Lemons1.50@2.75
Lemonettes1.25@1.75
Limes, Mex., cs.4.00@5.00
Valencias3.75@4.75

DRIED FRUITS

Wholesale Prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼c. All outside sections ¼c lower.
Other Fruits, Stand-Choice Extra
50-lb. boxes ard. Choice Choice Fancy
Apricots6¾c 7¾c 8¼c 9c
Peaches3¾c 3½c 3¾c 4½c
Pears7c 8c 9c 10c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and become effective August 1st: Fancy seeded, 16-oz., 6½c; do, 12-oz., 5c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 6c; bulk, 5¾c; Thompson seedless, No. 1, 16-oz., 7½c; 12-oz., 6¼c; 50-lb. cs., 6½@6¾c; Sultanas, 16-oz., 7¼c; 12-oz., 5¾c; 50-lb. cs., 6¼c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.50; 48 to cs., \$3; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 5c; 2-crown, 5½c; 3-crown, 5½c; 4-crown, 5½c; London layers, 3-crown, 20-lb. bxs., \$1.15; 4-crown, \$1.50; Imperial clusters, 6-crown, 20-lb. bxs., \$2.50; 5-lb. bxs., 50c additional; 10-lb. bxs., 25c additional; fancy clusters, 1-lb. cartons, 20 to cs., \$1.60; 12 to cs., \$2; 5-lb. cardboard cartons, \$2.25; bulk, layers, 4 to cs., 50 lbs., \$2.50.

NUTS

Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values. Nonpareil 14½c, IXL 13c, Ne Plus 12c, Drake's 10½c.

Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.75@4.85
Pink3.75@3.90
Black Eyes3.25@3.50
Cranberry4.15@4.25
Small White4.70@4.80
Garbanzos3.50@3.75
Large White4.50@4.60
Bayou4.50@4.60
Manchurian Speckled Bayous4.00@4.25
Red Mexican4.75@5.00
Red Kidney5.50@5.75
Horse Beans2.00@3.60

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White6½@7½
Light Amber4@5½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley10½@12½
Sonoma-Mendocino13½@15
Oregon-Washington13½@15

HAY

Under date of September 25, 1915, Scott, Magner & Miller say:
Receipts for the past week were 2641 tons. For the three preceding weeks, 3686, 4047 and 5311 tons respectively. The fields are about cleared and practically all hay is now under cover with the result that season storage charges will have to be paid even though hay should be moved from the warehouses at this time. We look for the market to advance at least enough to cover

these charges and as there is no doubt among the holders of hay that the crop this season was decidedly short and below normal, we do not believe they will be in any hurry to move stock from the warehouses until prices advance so as to show a profit. Fancy grades are scarce. This applies both to wheat and red oat and receipts of this kind have moved off readily and at our top quotations. It is to be noted that three large hay warehouses have been destroyed by fire during the past few weeks, which lessens considerably the amount on hand in the various districts, i. e., the King City warehouse with about 2000 tons, the Paso Robles warehouse with about 1400 tons and one of the Pleasanton warehouses with about 2500 tons, a total of practically 6000 tons which has been consumed by fire. The government awarded a contract of 2500 tons for export during the week. Interior demand has been better than for sometime past and hay is being shipped to many points that usually ship to this market. Alfalfa from the River districts is in great demand with very light supply and top quotations have been realized for this commodity. Interior alfalfa, however, is not as desirable at the present time although several large lots have changed hands during the week at prices much lower than for the River product. The straw market is unchanged.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (It bales).....	14.50@16.00
No. 1 Wheat or Wheat and Oat	12.00@14.00
No. 2 Wheat or Wheat and Oat	8.50@11.00
Choice Tame Oat.....	12.00@13.50
Other Tame Oat.....	9.00@11.00
Wild Oat	7.00@10.00
Alfalfa	10.00@13.00
Stock Hay	6.00@7.00
No. 1 Barley Straw.....	25@40

GRAIN

Alfalfa Seed	16½
Wheat, Cal. Club.....	1.52½@1.55
Blue Stem	1.65@1.67½
Barley Feed	1.20@1.22½
Shipping and Brewing.....	1.22½@1.25
Corn, Eastern Yellow.....	1.67½
Oats, Red, Feed.....	1.22½@1.32½
Oats, Red, Seed.....	1.35@1.40
Oats, Black, Feed.....	1.90@2.00
Millet	2½@3
Rape	2½
Flaxseed	3@5½
Rye	2.00@2.25

FEED STUFF

Wholesale prices:

Alfalfa Meal, car lots.....	15.00@16.00
Bran, ton	26.00@27.00
Feed Cornmeal	41.00@42.00
Cracked Corn	41.00@42.00
Rolled Barley, ton.....	25.50@26.50
Middlings	30.00@32.00
Shorts	27.00@28.00
Oilcake Meal	37.50@39.00
Cocoanut Oilcake Meal.....	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Sept. 29, 1915.

Valencias are closing the orange year with remarkably fine prices. The finest of stock of regular sizes commands from \$5.25 to \$6.00 per box delivered. It now appears that before the 31st of October all fruit will be cleaned up, though it may perhaps be the middle of November before it is all disposed of in the Eastern market. The shipment of Navels will begin soon after the first, but they will not go forward in quantity, even from the earliest sections, until about November 15. This will put them in the market ready for the Thanksgiving trade.

Some of the finest lemon sales of the season have been made within the last week. The top notch price, however, has been around \$3.50, with most of the stock selling below that. This is a satisfactory ending of an unsatisfactory season.

Shipments

Shipments of oranges from Southern California points since November 1, 1914, 38,325, lemons 6,660, total 45,085; to same date last year, oranges 43,326, lemons, 2,783, total 46,109. Shipments from Tulare and Butte County points the same as given last week.

NEW YORK, Sept. 27.—Thirteen cars Valencias, two cars lemons sold. Market easier and lower on Valencias, especially sizes 216s and smaller. Market slightly easier on lemons. Weather fair and cool.

Valencias—	Avg.
Atlas, Or. Ex.	\$5.95
Anaheim Supreme, S. T. Ex.....	6.85
Hector, Or. Ex.	5.45
Mother Colony, S. T. Ex.....	5.45
Duquesne, A. C. G. Ex.....	6.35
Balboa, S. T. Ex.	3.90
Fort Pitt, A. C. G. Ex.....	5.00
Old Mill, A. C. G. Ex.....	4.95
Geo. Washington, Or. Ex.	5.75
Martha Washington, Or. Ex.	5.30
Carmencita, S. T. Ex.	5.70

Ticktock, S. T. Ex.	5.10
Banana Belt, Or. Ex.	4.40
Tree Ripes	3.50
Glendora Home, A. C. G. Ex.	4.75
Green Hussar, O. K. Ex.	3.50
Owl, O. K. Ex.	3.35
Parrot, S. A. Ex.	4.35
Hawk, S. A. Ex.	3.15
Mtn. Crest, S. A. Ex.	2.95
Transcontinental, Or. Ex.	5.00
Goldfinch, Or. Ex.	4.80
El Modena, Or. Ex.	5.05
Copa de Oro, Or. Ex.	3.80
Gold Medal, G. O. Groves.....	5.20
Silver Medal, G. O. Groves.....	4.35
Medal, G. O. Groves.....	3.15
Old Mission, xL, Chapman.....	7.25
Old Mission, fy., Chapman.....	6.55
Golden Eagle, Chapman.....	5.60
Lady Rowena, Chapman.....	3.95
Stock Label, Chapman.....	2.70
Orchard, National O. Co.	5.10
Standard, National O. Co.	4.10
LEMONS—	Avg.
Limoneira Co., Selected, vent.....	\$2.80
Loma, ventilated	2.65
Wave, ventilated	2.60

CINCINNATI, Sept. 27.—Three cars sold. Market is steady.

Valencias—	Avg.
Liberty	\$3.85
Valley	3.50
California, A. C. G. Ex.	4.00
LEMONS—	Avg.
Setter, A. H. Ex.	\$2.50
Palm Tree	1.75

BOSTON, Sept. 27.—Five cars sold. Market is unchanged.

Valencias—	Avg.
Mars, Amer. Ft. Dis.	\$5.00
Jupiter, Amer. Ft. Dis.	4.30
Mother Colony, S. T. Ex.	5.25
Balboa, S. T. Ex.	4.65
El Pavo Real, S. T. Ex.	3.65
Daisy, Covina Ex.	4.85
Gladiola, Covina Ex.	4.60
Holly, Covina Ex.	3.85
LEMONS—	Avg.
Trail, A. C. G. Ex.	\$4.05
Pride of Corona, Q. C. Ex.	3.75
Corona Beauty	3.40

PITTSBURGH, Sept. 27.—One car Valencias sold. Market is steady.

Valencias—	Avg.
Banana Belt, Or. Ex.	\$4.45
Tree Ripened	3.90

PHILADELPHIA, Sept. 27.—One car Valencias sold. Market strong on oranges, unchanged on lemons.

Valencias—	Avg.
Duquesne, A. C. G. Ex.	\$5.75
Fort Pitt, A. C. G. Ex.	5.25
Old Mill, A. C. G. Ex.	5.05

ST. LOUIS, Sept. 27.—One car Valencias sold. Market is steady.

Valencias—	Avg.
Progressive, Or. Ex.	\$4.50
Searchlight, Or. Ex.	4.90
S. S. Brand, Or. Ex.	4.85

CLEVELAND, Sept. 27.—One car lemons sold. Market is unchanged.

Lemons—	Avg.
Pronghorn, O. K. Ex.	\$2.00

CHICAGO, Sept. 27.—Some belated California cantaloupes came on the market and were snapped up at 2.50 for standard crates. Oranges, boxes, California Valencias, fancy, 5.00@5.50; choice, 4.50@5.00. Lemons, boxes, California, 2.25@3.00. Casabas, flat cases, California, 75@1.00. Plums, cases, four baskets, California, Italians, 75@90; Hungarians, 1.00@1.20; Silver Egg, 90@1.00. Grapes, cases, 4 baskets, Tokay, 1.00@1.25; seedless, 1.00@1.15; Malaga, 85@1.00. Pears, Bartletts, boxes, 50 pounds, California, 3.00@3.25; Washington, 2.25@3.00. Quinces, bushel, 1.00@1.25. Citron, barrels, 1.00@1.25. Pawpaws, baskets, 20. Persimmons, 12-pint cases, 75. Apples, best barrel stock, 2.00@2.50.

TIRE CONDITIONS

Tires, like the engine or other parts of a car, require a reasonable amount of attention and care if the owner expects to secure the best results. There have been many refinements in the construction of tires, and those

built with quality for a base are very dependable; in fact, the motorist ordinarily places so much confidence in the tire equipment, sometimes unconsciously, that the tires do not receive the frequent inspection and attention that is considered necessary for the car.

Should the engine overheat and the bearings burn out, due to lack of lubrication, the result would not be considered an evidence of mechanical error; it would be properly chargeable to oversight and neglect.

It is not always possible to avoid stones and other sharp objects, ruts and severe road conditions, and we shall not attempt to define certain rules or offer impracticable suggestions to be followed in using tires. It is the privilege of the purchaser of a tire to use same according to his own ideas, but we believe that with more information, relative to tire conditions, and with frank, friendly advice regarding the causes, remedies, etc., it will be possible, in many instances, to increase the service and decrease the annoyance and expense. Quality alone, whether it pertains to tires or car, will not insure the greatest efficiency, but a combination of quality and proper care will result in satisfactory service at a low cost of maintenance.

APPLYING TIRES

Before applying tires remove rust and all other foreign matter from rims. If tires have been ridden deflated at any time, mud may have accumulated on rims and unless it is removed the tires cannot seat or fit properly. The danger of pinching inner tubes can be reduced to a minimum by dusting soapstone or powdered mica on the rims so that the tire beads will slip easily into the correct position.

Inflate inner tubes just enough to round them out before placing them inside of cases. Do not use tubes of the wrong size and be sure that the valves are equipped with spreaders adapted to the particular type of cases used. Dust the inside of the case and the inner tube with powdered mica or talc. This will reduce friction and prevent adhesion of tube to case after being heated in service.

When the tires have been removed for any reason it is a good plan when reapplying them, to reverse them, that is, to place the worn sides of the tires toward the car. It is not generally known, though it is a fact, that almost all the side wear on a tire occurs on the side from the car. This is due to road construction, rut wear, curb scraping, etc. The life of a tire may be prolonged to such an extent that a great deal more mileage may be secured by turning the tires about occasionally to secure even wear upon both sides.

SOIL PRODUCTS EXPOSITION

When the complete premium list of the International Soil Products Exposition is received by the prospective exhibitor in Denver September 26-October 10, he is going to be very agreeably surprised at the fine showing of premiums that it will make.

The entire premium list when complete will run about \$15,000 and will comprise many splendid premiums. There will be more cash prizes offered

this year than usual and the cash awards in individual classes have been increased in many instances over those of previous years.

Wheat, perhaps quite naturally, wins some of the best premiums.

For the best bushel of wheat, any variety, the sweepstakes prize is \$300.00 in gold. For the best bushel of hard wheat, the International Harvester Company of America offers a manure spreader, valued at \$125, and for the best bushel of soft wheat the Simplex Spreader Manufacturing Company of Kansas City offers one of its simplex straw spreaders, valued at \$75.00.

TOADS TEN DOLLARS EACH

Loathsome though it may be in appearance, the toad is one of the farmer's best friends. The desire of children and of many men to kill a toad as soon as seen, should be discouraged. The toad lives from 10 to 40 years, and it can lay over a thousand eggs a year. It has lived two years without food, but cannot live long under water. It never takes dead or motionless food. It captures and devours wasps, yellow jackets, ants, beetles, worms, spiders, snails, bugs, grasshoppers, crickets, weevils, caterpillars, moths, etc. In 24 hours the toad consumes enough food to fill its stomach four times. A single toad will in three months devour over 10,000 insects. If every ten of these would have done one cent of damage the toad has saved \$10. The toad is a valuable friend to the farmer, gardener and fruit-grower, and can be made especially useful in the greenhouse, garden and berry patch. Give the toad the freedom of the field!

BRYAN DRIVES TRACTOR

Regarding a recent demonstration of tractors, the Omaha Bee says:

"Col. William Jennings Bryan, he of the silver tongue, cannot only make a success of oratory, but can, if need be, turn his hand profitably to farming. At least he made good at the Fremont tractor demonstration, successfully piloting one of the Bates 'Steel Mule' tractors in a public demonstration. With a Grand De Tour plow attached to the tractor, Mr. Bryan successfully piloted the 'Steel Mule' over a strip of the demonstration field, turning up several furrows as neatly as any plowman who ever turned sod. Everybody was pleased with Mr. Bryan's work and he, himself, was highly elated over his success. Upon finishing his task he alighted from the machine with a beaming countenance, and as H. H. Bates, the inventor, approached, Mr. Bryan said: 'It is very easy to drive it straight. I was very anxious to see how straight a furrow I could make.' And as for Mr. Bates, he says that twisting the tail of his 'Steel Mule' is more certain of good results than can be expected from twisting the tail of the Democratic mule. Mr. Bryan's appearance created considerable interest among the crowds in attendance at the demonstration."

THE COUNTY FAIR

From the U. S. Department of Agriculture comes its latest bulletin containing timely facts and hints regarding county fairs. It is interesting to compare these suggestions with the ideas being carried out by the directors of the Riverside District Fair, to be held in Riverside, October 5th to 9th—next week. The marked success of the past two years of the county fair at Riverside and the strenuous efforts and excellent plans being made this year guarantee genuine profit and pleasure.

Attend the **RIVERSIDE DISTRICT FAIR** October 5-9
The Great County Fair of Southern California at Riverside

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OCT 13 1915

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

October 7, 1915

SAN FRANCISCO



California Walnuts

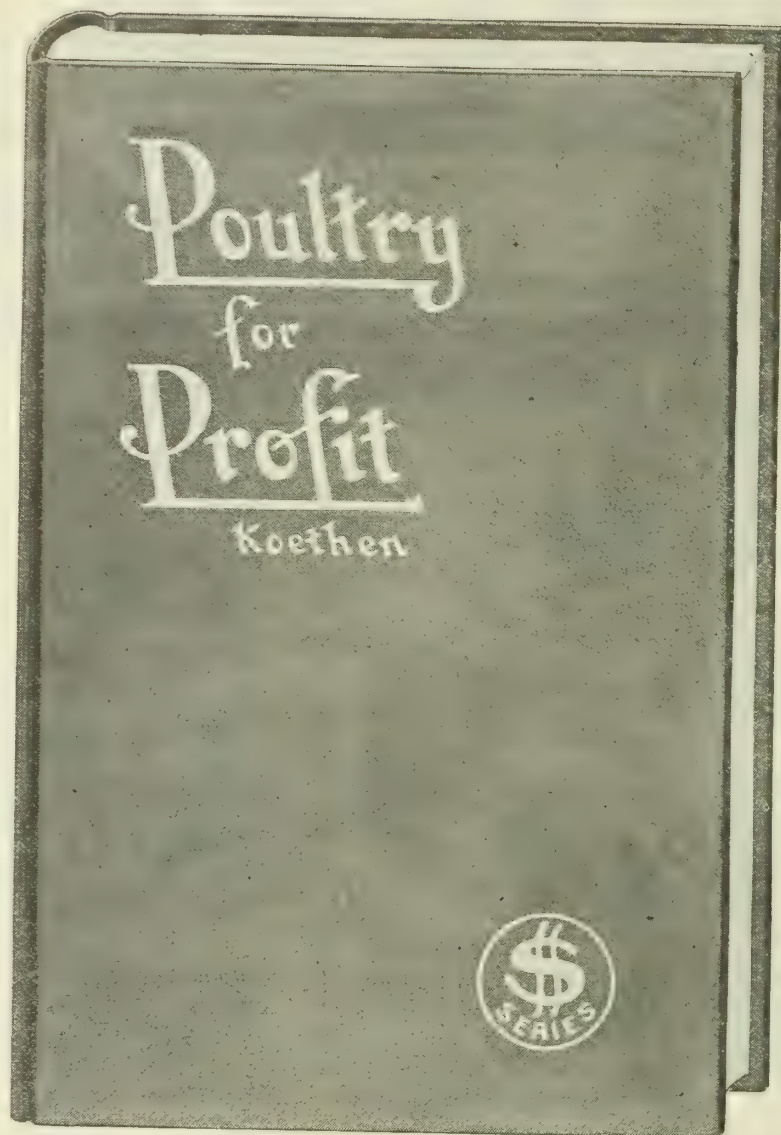
THIS ISSUE: Horses at P. P. I. E., Walnuts, Fleas, Profitable Family. NEXT ISSUE: Elwood Mead

the Cultivator Poultry Book

Poultry for Profit

by

Jean A. Koethen



PACIFIC POULTRYCRAFT SAYS:

A brand new book on poultry published by that old reliable Cultivator Publishing Co., Los Angeles. The author, Jean A. Koethen, has really written a poultry book worth while. The different subjects are treated with a directness that is refreshing, after reading so many books that say so much and mean so little. The book is intended for the beginner and farmer, but we commend it most heartily to anyone interested in poultry; whether for pleasure or profit; it is full of good things from cover to cover.

THE LOS ANGELES TIMES SAYS:

The author of this manual has covered the subject fully, giving the salient features and practices of an enlightened-poultry culture as it applies to California conditions, based largely on personal experiences, and intelligent compilations from recognized authorities.

THE RIVERSIDE PRESS SAYS:

The Press is in receipt of a copy of this work, called "Poultry for Profit," and has no hesitation in commending it to either the "backlotter" who keeps a few chicks for his own pleasure, to the fancier who works to the "standard," and to the commercial poultryman who makes a business of poultry culture. Before its publication, the manuscript of "Poultry for Profit" was submitted to practical poultrymen, to experts and simple poultry enthusiasts, and all agreed that it was more comprehensive, more readable and vastly more helpful than any similar poultry book yet published. It covers the widest range, discussing breeds, feeds, diseases, housing, marketing and answers the thousand and one questions that even the expert poultryman sometimes has to ask and the amateur is ever asking.

THE PORTLAND OREGONIAN SAYS:

The Weekly Oregonian takes pleasure in recommending this book to its readers, for it is "the right stuff," told in the right way by the right woman.

"Poultry for Profit"

Gives more practical knowledge of every branch of the poultry business in a more concise and simple manner than any similar book published. With the knowledge gained by a study of this work experience in the poultry business is not as necessary. Through its guidance obstacles are overcome before it is too late.

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Brooding	Feeding	Breeding
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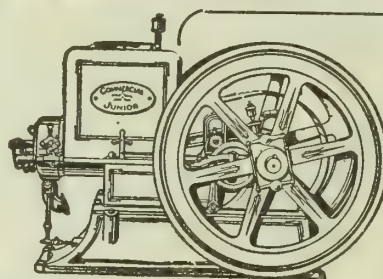
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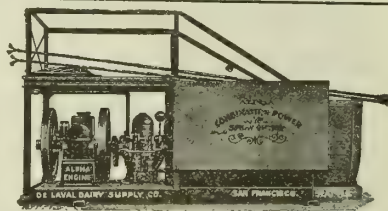
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 15

LOS ANGELES: THURSDAY, OCTOBER 7, 1915

One Dollar Yearly

A Million Dollars Worth of Stock on Exhibition

W. S. Guilford Watches the Great Parade of Horses, Ponies, Jacks and Jennies and Writes of the Wonderful Show of Live Stock for Cultivator Readers



ONE of the greatest horse shows ever held is in progress now at the Panama-Pacific International Exposition at San Francisco. This is rather a broad and far-reaching statement, but it was conceded by authorities of international reputation who were in attendance. There have been horse shows with larger entry lists, but none where there was more

quality, none held where the environment so far as grounds and surroundings are concerned was more delightful. The attendance is good and D. O. Lively, chief of the department of live stock, and his lieutenants are entitled to great credit for the pleasing and business-like way in which the show is conducted.

All classes of horses are represented, as is proper for a world's fair

show. There are Percherons, Belgians, Clydesdales, and Shires representing the draft breeds; standard trotters, thoroughbreds (running horses), saddle horses, Morgans, Hackneys, Arabians, Shetland ponies, Welsh ponies, all classes of pleasure and draft horses in harness, hunters, jumpers, polo ponies and police mounts. Then there are many special events, such as hurdle races, jumping contests and

cavalry maneuvers. And last, but not least, is a good show of jacks, jennets and mules.

Nearly \$130,000 in prizes was offered, and entries are on the grounds from all over the United States. The foot-and-mouth quarantine restrictions were not made applicable to the horse show.

Many leading men in the horse industry. Continued on Page 352

Community Cooperation

WELL EQUIPPED COMMUNITY

R. V. Holland.



LITTLE thought on the subject will invariably convince one that the degree of satisfaction we get out of life depends largely upon the conditions prevailing in the community in which we live.

Whatever advantages the community affords we enjoy, while to whatever extent the locality is deficient or poor in public utilities and opportunities, we who make up its population are circumscribed in life's pleasures and comforts.

Theirs are the most satisfying lives who live in a well equipped community and who go to make up a congenial neighborhood. It goes without saying that a prosperous population is almost a contented, happy population.

One of this country's greatest financiers made the statement a few years ago that one of the prime reasons for the increasing cost of living was the lack of well directed effort on the part of small-town community people. He went on to explain that lack of cooperative effort on the part of people living in small towns naturally resulted in an impoverished community, one in which life becomes a burden rather than a pleasure. It is from localities and conditions of this kind that the large cities draw their myriads of young men and women, boys and girls.

For most of us a community must have a minimum equipment, strong church advantages, good schools, good roads, easy communication

with the outside world and adequate shopping and marketing facilities. These essentials make possible the many other elements necessary to a prosperous neighborhood.

The above mentioned advantages are all community institutions and can only be secured and maintained through the cooperation of people in the community.

'Tis an old saying, but true enough to repeat, that an individual gets out of the community no more than he or she puts into it. Selfishness is, therefore, the most effective bar to our happiness. Each of us should and must be willing for every other person in our community to enjoy some of the fruits of our individual labor and sacrifice: we receive in return, however, the benefit of our labor and sacrifice multiplied by the number of cooperating neighbors we have. Thus by each contributing our share of labor, money or patronage we share in the general benefits and advantages resulting from the united effort of all of us.

No person is apt to look upon schools, churches, parks, pavements, etc., as commercial. We rather consider them as institutions better off if kept out of commercial and political influence. However, we must remember at all times that these advantages are to a large extent made possible and maintained by the business interests of the community of which the retail store is a dominant factor. Consequently, the prosperity of local retail merchants has much effect upon these community blessings and it therefore is to our best interests to patronize local stores whenever possible.

Your home merchants are an inextricable part of community life. They can serve you to as good advantage as anyone else anywhere, and it is to your interest in dollars and cents to trade with them, all things being equal.

Some Notes on the Walnut

Leonard Coates Writes for Cultivator Readers of Some of the Certainties and Uncertainties of Walnut Culture. Varieties, Budding or Grafting, Stocks, Propagation, Pruning and Other Points Touched Upon



PINIONS as to the successful culture of the walnut are exceedingly varied, and it is this divergence of opinion which causes many persons to hesitate before planting a walnut orchard. With the existing facts, however, it is no longer necessary to regard walnut culture as prone to more uncertainties or vicissitudes than any other fruit tree crop.

The earlier practice was to grow trees as seedlings, and the orchards thus raised produced nuts of all types and grades. By selection, these types were improved, until, in Southern California, some of these seedlings became so near to yielding a nut which met the market requirements as standard, and were grafted from, to insure exact perpetuation of the variety. Of these, perhaps, the most prominent is the Placencia Perfection, which is now grown commercially on a very large scale and is the variety which has done so much towards the permanent establishment of the industry in California.

The walnut blight, which affects, more or less, all of the varieties of this strain, caused growers to endeavor to find a walnut which was resistant to this disease, while possessing the necessary market qualifications. To this end several seedlings have been produced which possess greater hardiness and which are claimed to be immune to the blight.

As materially assisting in this disease resistance, it was found to be necessary to discover or originate varieties which did not start growth too early in the season, the young growth in early spring, during changeable climatic conditions, being easily susceptible to the blight.

The same trouble had affected the walnut in Europe, and imported varieties of the walnut are now being grown both South and North.

The varieties of walnut of which Placencia Perfection is typical, do not succeed north of Tehachapi; this is conclusive. Therefore the French varieties or their seedlings are the only ones considered in Northern California. In the South, some of these French varieties do not meet with approval, so that, in the broad question of variety, we are yet somewhat in the experimental stage. For this reason, and to avoid being partial, it is almost impossible to suggest the best varieties for Southern California. In the North, where the industry is comparatively small at present, only the French varieties or their seedlings have any chance of success. Of these the Mayette, Franquette, Chaberte, Parisienne, are types. The Mayette type stands at the head, as illustrating the true Grenoble walnut. The qualifications of a walnut are size, which should be medium rather than too large; shape, roundish, somewhat flattened at base; soft shell, but not

soft enough to break during harvesting or marketing, and with well-closed ends; plump kernel, with white or very light-colored skin; good flavor. It might also be added that the color of the shell should be a bright, light brown, and not the dull, dead color of some otherwise good nuts.

Walnuts were formerly all on their own roots, which is still the practice in Europe. It has been found that in California the native black walnut generally makes the best stock. The Eastern black walnut is a good stock in very moist soils, and the English, or "own root" often makes a better tree under these conditions than the native species. Several hybrids are used, and with varying success. Instances of abnormal growth always imply unusually favorable conditions. Nothing is better than a selected seedling of the California black walnut as a stock under the average existing conditions.

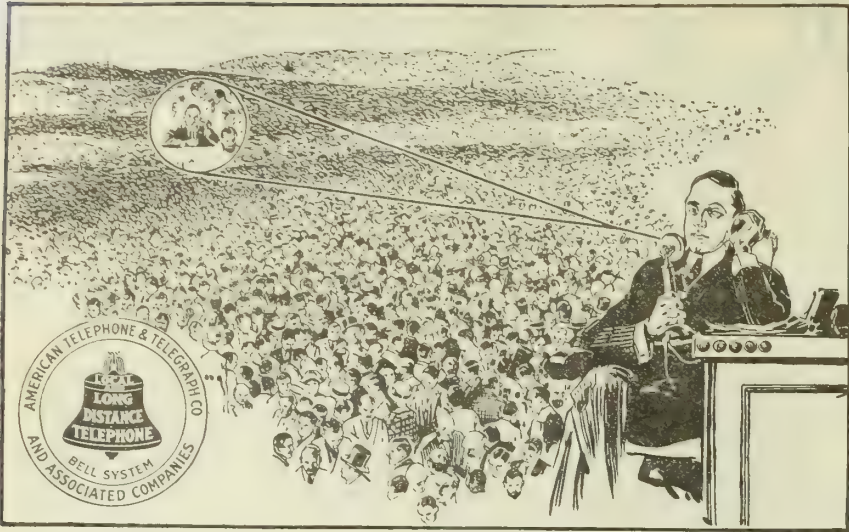
Propagation is done by grafting and budding. The latter has not been widely successful, although in our own grounds we get 90 per cent to 95 per cent stand with buds, either on large or small stocks. We bud twice in the year, in June, with buds of previous season's growth, and in September, with those of current season. There are many details in both the preparation of buds and stocks which are essential to success which could

not be explained in a brief article, and even then, practice and patience can alone make perfect.

It has generally been stated that the walnut requires no pruning, and, still further, that the tree is injured if pruned. Both postulates are wrong, and are, supposedly, on the assumption that the walnut, unlike any other commercial fruit tree, should be allowed to grow as a timber tree, naturally, and without restraint. With this idea in view the walnut is planted 50x50 or 60x60 feet apart, or only about a dozen trees to an acre. Is this a profitable commercial proposition for the man who plants the trees?

A very large walnut tree bears only on the outside, or extremities of branches; it is practically impossible to spray it, and harvesting the crop is an expensive undertaking. Walnut trees may be planted 25x30 or 40 feet apart, be kept pruned for a few years, have a great abundance of fruit spurs close in on the main limbs, and be a very profitable crop within ten years. A future owner, in another decade, may take out some of the least productive trees, leaving more room for those that require it. This is not mere theory; walnut orchards on both of these plans are in bearing in the state.

This may be enlarged upon at a future date, with photographs illustrating the different methods.



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Citrus and Tropical Fruits

THERMOMETERS

By Madison Cooper in Cold.



THE word thermometer is of Greek derivation and means a measure for heat. This instrument is constructed on the well known principle that heat expands all bodies.

For his first instrument Fahrenheit used alcohol. But before long he became convinced that a more suitable article to use in the glass tube was semi-solid mercury. The basis of Fahrenheit's plan was this: To mark on the tube the two points respectively at which water is congealed and boiled, and graduate the space between. He commenced with an arbitrary marking, beginning with 32 degrees, because he found that the mercury descended 32 degrees before coming to what he thought the extreme cold resulting from a mixture of ice, water and sal ammoniac.

Thermometer Scales Compared

Below will be found a diagram with the thermometer scales in common use compared. The Fahrenheit scale is used most exclusively in America, while the Reaumur and Centigrade scales are in common use in foreign countries. The freezing and boiling points of each are made to show the figure used at these points, and thus a rough comparison may be made.

C.	F.	R.
10	50.0	8.0
9	48.2	7.2
8	46.4	6.4
7	44.6	5.8
6°	42.8°	4.8°
5	41.0	4.0
4	39.2	3.2
3	37.4	2.4
2	35.6	1.6
1	33.8	0.8
zero	32.0	zero
-1	30.2	-0.8
2	28.4	1.6
3	26.6	2.4
4	24.8	3.2
5	23.0	4.0
6	21.2	4.8
7	19.4	5.6
8	17.6	6.4
9	15.8	7.2
10	14.0	8.0
11	12.2	8.8
12	10.4	9.6
13	8.6	10.4
14	6.8	11.2
15	5.0	12.0
16	3.2	12.8
17	1.4	13.6
18	0.4	14.4
19	2.2	15.2

Conversion of Thermometer Degrees

°C to °R multiply by 4 and divide by 5.

°C to °F multiply by 9, divide by 5, then add 32.

°R to °C multiply by 5 and divide by 4.

°R to °F multiply by 9, divide by 4, then add 32.

°F to °R, first subtract 32, then multiply by 4 and divide by 9.

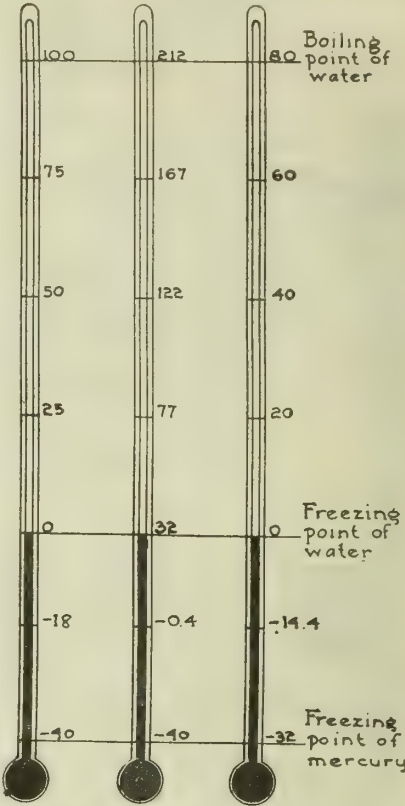
°F to °C, first subtract 32, then multiply by 5 and divide by 9.

On the Fahrenheit thermometer the freezing point is 32 degrees above zero, while on the Centigrade thermometer the freezing point is at zero. The size of the degree on the Fahrenheit instrument is smaller than on the Centigrade, the boiling point of water being represented by 212 degrees on the former as compared with 100 on the latter. Thus it will be seen that on the Centigrade thermometer the difference between the freezing and boiling points is 100 degrees, while on the Fahrenheit thermometer it is 180 degrees, or the difference between 32 and 212.

A Fahrenheit degree is only five-ninths of a Centigrade degree and accordingly a degree of the latter is nine-fifths or one and four-fifths times the size of a Fahrenheit degree.

In working out the temperature in terms of the Centigrade thermometer,

assuming that the Fahrenheit thermometer registered 32 degrees below zero, it would be necessary to add the 32 degrees below zero to the 32 de-



grees above zero, because the freezing point starts at 32, and the sum would be 64 degrees. As a Fahrenheit degree is only five-ninths the size of a Centigrade degree 64 should be divided by nine, giving a result of 7.11 which multiplied by five, would give 35.55, the number of degrees below zero on the Centigrade thermometer.

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FLORIDA CITRUS CROP

The Grower representative talked with growers this week from every shipping center as to the size of the coming citrus crop, and the consensus of opinion seemed to be that as a whole it would be shorter than last year; oranges slightly less, grapefruit not much over 50 per cent.

Manager Bateman, of the DeSoto County Exchange, stated that there would be more oranges at Wauchula, Fort Ogden and Punta Gorda than last year, but that in the big producing district of Arcadia the crop would fall off some, and that, taken as a whole, he expected the orange crop would be about the same as last season. There would be an especially heavy crop of tangerines, though DeSoto County does not produce many of this variety. Grapefruit would be about 50 per cent of a crop. Asked if the Exchange would ship more this year from this county than last season, Mr. Bateman, with a twinkle in his eye, said, "Oh, about 700 per cent more." This statement is not far wrong, for much work has been done in DeSoto County this past season, and instead of the output being 60,000 boxes it will be over 400,000 boxes.

According to Director Stewart, of Volusia, oranges will be in excess of last season in some districts, notably Lake Helen, Emporia and Crescent City, but there will be less in DeLand and Orange City. There will probably be at least as many oranges. Tangerines will be in big supply; grapefruit about 60 per cent of a crop. The Exchange expects to add about 20 per cent to its holdings as compared with last season.

Manatee crop is very short all around and instead of 500,000 boxes, there will hardly be over 250,000 boxes shipped from the county. Manatee produces more grapefruit than oranges and this in some measure will account for the great falling off. The Exchange will have an increased acreage and membership, but will probably ship less fruit on account of the shortage. Manager Gumprecht states that a meeting will be held at Miakka on the 22nd of this month to put the growers right on the crop situation. He states that he has heard that growers were selling citrus fruit as low as 30 cents a box on the trees.

Orange County will very nearly have as many oranges this year as last, but grapefruit is considerably less all over the county. Even with less fruit in the county the Exchange will handle more fruit this year, though this is largely on account of the fact that the Orange Sub-Exchange will handle the fruit shipped through Kissimmee in Osceola County. So states L. W. Tilden.

There is a very good orange crop in the territory of the Indian River Sub-Exchange, which extends from New Smyrna to Vero along the East Coast, though grapefruit will be very light. According to Director H. G. Putnam, this sub will handle very nearly as much fruit as a year ago. He states that with one good season he believes that a great majority of the Indian River fruit would come into the Exchange fold. Last year was bad and out of six associations but three stuck, though others are being formed to take their places.

Director Ed Parkinson says that the orange crop of Lee County is "pretty good," as heavy as last year, while grapefruit will be short at least 50 per cent.

Manager Walker, of Polk, says that there will be about 90 per cent of an orange crop and about 60 per cent in grapefruit. The total crop of Polk County last year was about 900,000 boxes, of which the Exchange handled 75 per cent, and about this percentage will be shipped this coming season.

Manager Martin states that the Hillsboro orange crop is "spotted," some sections reporting a heavy crop, while others are to the effect that the output will be small as compared with last season. He states that this also applies to Pasco and Hernando Counties. He believes on the whole that oranges will not be much less than normal, but that grapefruit will be not over 40 per cent.

Lake County will be some short on both oranges and grapefruit, particularly the latter. The Exchange is making gains in this county.—Florida Grower.

BANISH ROBBER FRUIT TREE

Get rid of the orchard tree that doesn't earn its own keep!

And the way to do this is to keep a record of the yield of every individual tree, and to re-bud from a high-yielding tree the tree which fails to pay its way. Thus, just as the dairyman who keeps a record of the butter-fat production of each of his cows can eliminate the "boarder cow" who produces less than the value of what she eats, so the orchardist can eliminate the fruit tree which fails to pay fair rent for the ground it occupies.

Such is the text of a sermon preached by Verne W. Hoffman, a student in the college of agriculture, in an article on "Individual Tree Performance Records" in the September number of the University of California Journal of Agriculture, a magazine published monthly by the agricultural students.

Hoffman tells here the interesting story of how Mr. A. D. Shamel of the United States Department of Agriculture, a government expert who makes his headquarters at the university's citrus experiment station at Riverside, induced the management of a great citrus orchard near Corona, to keep records of the individual yield of 65,000 orange and lemon trees. Use of this system for three or four years has proved how practical and profitable it is on a commercial basis.

Every tree in this orchard has a number painted upon it. Each tree is picked separately, the fruit weighed, and the record entered in a permanent record book.

These records soon showed that one out of four of all the lemon trees in the orchard failed to pay their way. Examination was made to see if the low yield was due to bad soil conditions, gophers, or gum disease. If no such excuse could be found for the tree, then it was rebudded with a bud from a tree whose records had proved it to yield a high crop and a good type of fruit. The first 2500 trees rebudded all without exception came up to the desired standard, and 2000 more have now been flagged for rebudding.

Hoffman reports that Mr. Shamel's experiments show that an unproductive tree can be changed, by top-working, into a good producer. Three years after being rebudded, one lemon tree produced 329 pounds of lemons (during the half-year ending June 30, 1915); that is, about seven field boxes, a good average for the ordinary high-producing tree of ten or twelve years.

So the day is coming when the lazy fruit tree will be as promptly detected as the lazy cow who fails to earn her own living. A lazy fruit-tree, like a lazy cow, uses as much land and feed and requires as much labor and care as the highly-productive tree or the highly-productive cow.

These valuable lessons of more prosperity for the farmer and more food for the consumer are to be made much of during the Farmer's Short Courses in General Agriculture, Dairy Manufactures, Horticulture, and Poultry Husbandry, for practical farmers and their wives, at the University Farm at Davis from October 4 to November 12.

HOW HE GOT EVEN

A busy housewife came into the sitting room with a determined look in her eyes.

"I really shall have to punish those children," she began.

"What have the little beggars been up to now?" asked the father, looking up from his newspaper.

"Why, they've made a mess of my sewing room," explained the wife. "Needles, reels of cotton, scissors—everything has been hidden away in the most unexpected places. It is really exasperating."

Her husband laid down his paper and smiled benignly.

"I did that," he said, calmly. Then, in answer to a questioning look, he went on. "You tidied up my desk so beautifully the other day that I thought it only fair to return the compliment. So I tidied up your sewing room."—From the Pittsburgh Chronicle-Telegraph.



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These points are explained in detail in our wagon folders and are pictured so plainly that it's almost like looking at the wagon itself. Some dealer near you handles these wagons and has samples set up for you to see. Drop us a line and we'll send you the booklets and folders. We'll also tell you where you can see a Columbus or Weber wagon so you won't have to waste any time looking for it. Write to us today.

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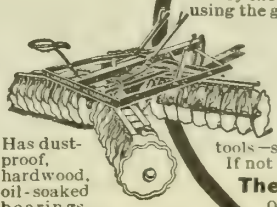
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Deciduous Fruits

AN APPLE RANCH AND ITS DEVELOPMENT

By Vida French, Sebastopol, Before State Fruit Growers' Convention.

In determining the location of an apple orchard one should carefully consider the following factors: soil, nearness to available labor, site, exposure, air currents and water.

The soils preferable for apples are clay loams, moderately heavy clay and rich gravelly loams with limestone subsoil. The character of the subsoil is very important, particularly if near the surface. Apples must have a deep root system to protect them from winds and drouth. The contour of the subsoil does not always follow the contour of the surface. The water table should be four to six feet from the surface. An apple tree cannot live with wet feet because root development can't take place without air. Avoid heavy black muck like prairie soil, as trees run too much to leaf and are short-lived on soil of this character.

In determining the exposure, if there is danger from frosts a northern slope is best, then a northeastern or a northwestern. In sections with high drying winds the exposure should be away from the prevailing winds. If there is little danger from late frosts, a southern or southeastern exposure is desirable for high color and earliness of ripening. Never plant an orchard in a pocket, but be sure of good air drainage. The ideal site would be a tract of land slightly elevated above the surrounding country, as air currents are an important factor in the prevention of disease. There are five basic plans for laying out orchards; the square or rectangular system, the triangular or hexagonal, the alternate, the quincunx, and the contour. The first two are used most often. In the hexagonal system all the trees are equally distant apart, thus giving room for 15 per cent more trees per acre than the square system and affording three directions for cultivating instead of two.

In staking an orchard very accurate results may be obtained with a planting wire and range poles, though we used a triangle as well, which was 25 feet on a side with rings at the angles large enough to slip over a stake. To be sure of setting the tree in the exact place staked planting boards should be used.

Now we come to the selection of trees for planting. The choice of the individual plant is very important, particularly with the commercial orchard where the same body of wood is carried throughout the life of the tree. Many people make the mistake of rejecting plants which do not come up to some imaginary standard of their own. Be sure your ideal conforms to the variety and don't try to make a variety conform to your original ideal. The tree should first of all be healthy and a strong grower. It should be carefully examined for any signs of disease or insect pests. A certificate of inspection in the nursery by the horticultural inspector is not enough. Plant one-year-old trees. They transplant better, the head may be pruned to any height desired, and they can be given a better form because not so likely to have been spoiled in the nursery row. The age of a tree is reckoned from the time of budding or grafting.

When your trees have arrived from the nursery don't leave them in the shipper's package but heel them in by digging a trench and laying them in it at an angle and then covering the roots with earth. Don't leave large bundles of trees tied together. Heeling-in is to prevent the roots from drying out. If the roots of a tree dry out its chances for starting again are very small. Heeling-in also supplies the tops with moisture. The tops of the trees should point south so as to protect the trunk from sun scald.

As to varieties, choose those best

adapted to your locality and market. If you ship wholesale have as few varieties as possible, but if you retail in small quantities then it is desirable to have a succession of fruit throughout the season.

When it comes to the planting don't be afraid of digging a large hole. The size of hole will depend upon the character of soil, size of root system, and depth. The heavier the soil the larger the hole must be. This is to loosen up the soil so an extended root system will be possible. The hole should be plenty large enough so that the roots won't have to be cut off. Never make the size of the hole a pretext for cutting off the roots. Plant from one to three inches deeper than in the nursery row and about 25 feet apart. In pruning the roots remove as little of the root system as possible. Cut off all bruised or damaged roots and make the cut at an angle to the axis of the root and not perpendicular to it, as when at an angle there is less chance for air spaces between the root and the soil, hence less likelihood of the cut portion drying out. The cut should be on the under side of the root.

Exposure of the roots at any time is very bad. Keep a wet sack over the bundles of trees when carrying them from hole to hole and never let the sun strike them. It is advisable to distribute the roots evenly around the tree, as a greater soil area is thus obtained and the tree is assured a support in heavy winds. When filling in the hole, if the subsoil is hard and lumpy, then save surface soil for the roots. When the hole is partly filled tramp the earth firmly about the roots, then mound the earth up about the tree to provide for settling, or water will stand on the roots. On the surface the soil must be left loose.

Never set a tree straight; slant the tree towards the prevailing winds. In the south trees are often slanted towards the south to prevent sunscald. In setting trees on a hillside the tree should slant uphill, for the wash on the slope tends to push it down the other way.

Watering newly-set trees is to be discouraged. A tree as received from the nursery is entirely out of balance. To equalize the top and bottom reduce the top to correspond with the loss of roots. The pruning done will depend on the kind and age of the tree. It may be pruned to a whip or pruned to a spur. In pruning one-year-old trees we always prune to a whip and start the head about 18 to 20 inches from the ground. The second year remove all but three branches and have these well distributed around the trunk. Each summer about June we go over the young trees and pinch back to stubs all growth not desired as framework. In from one to two years these stubs will form fruit spurs. The main pruning, however, should be done in the winter or early spring. As a rule, cut back only the past season's growth. If more than this is taken off, the tree will never have a good shape, since branches have started out on the two-year-old growth.

Pruning requires more personal thought than any other factor of orchard management. A plant is not an individual, but a colony of individuals made up of many units. Each bud and branch is competing with every other bud and branch in the struggle for existence. Pruning eliminates competition and thus saves energy.

The objects of pruning are to increase the vigor of the tree; to increase the size, amount and quality of the fruit; to remove worthless and deleterious parts; to change the habit of the tree from wood to fruit production; to facilitate orchard operations by thinning; and to train the tree to the desired form.

The general principles of pruning may be stated as follows:

Heavy top pruning increases the amount of wood growth, because the

equilibrium of the plant is destroyed. The food gathering area is the same, while the food-consuming area is decreased. To make up this deficiency an increased growth results. Prune weak growers heavily and too vigorous growers sparingly.

Root pruning reduces the vegetative growth.

Heading-in thickens and broadens the top.

Winter pruning tends to produce wood.

Summer pruning tends to produce fruit.

Overstimulated trees can be brought into bearing by summer pruning. This is exhaustive to the plant, however, because the leaves removed have not yet returned to the tree as much nourishment as they have taken out. Summer pruning should not be practiced for more than three years in succession.

We practice the clean culture or tillage system as everyone must in California. We plow twice, the first time about ten inches deep with a two-horse plow and the second time with a gang about six inches deep. We cultivate the orchards with a two-horse riding cultivator and harrow after every rain. After the rains have ceased the bearing orchards are harrowed every two weeks until the props are up, and the young orchard is cultivated all through the growing season and hand hoed three times.

There are three objects in tillage: First, it improves the mechanical condition of the soil; second, it conserves moisture, and third, it renders plant food more available.

Cover crops should be sown in the fall to plow under the following spring. This is the cheapest way to keep up the supply of humus. A cover crop hastens the maturity of wood in the fall; prevents root killing and washing of the soil by rains; it lessens evaporation in winter, increases the water holding capacity of the soil and improves the tilth. Rye and Canada field peas make a good combination sown broadcast at the rate of 2½ bushels per acre.

The fertilizing elements required by an orchard are nitrogen, potash, phosphoric acid and lime. The nitrogen increases leaf and stem growth, thus reducing fruit production. Fruit

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California Sunshine Making Raisins Out of San Joaquin Valley Grapes.

doesn't color up well when there is too much nitrogen in the soil. Potash is the most important element after trees come into bearing. It composes about 50 per cent of the ash of fruit and serves as the base for fruit acids, hence if potash is lacking the flavor isn't good, as fruit acids can't be formed. It also serves as a check to too much nitrogen and gives color to the fruit. Phosphoric acid is less important than the other two, being not nearly so essential to a fruit crop as to a cereal crop. It is necessary for the proper ripening of fruit. It enters into seed production and shortens the growing period as potash does.

Lime is more important to fruit than to other crops. It strengthens the growth of the tree, giving a better and stronger framework. It shortens the growing period and has a very marked influence in heightening the color. Fruit is the highest colored in lime-

stone soils. Lime has an indirect benefit in improving the mechanical condition of the soil.

One should not fertilize newly set trees, for they are not in a condition to avail themselves of large amounts of available food because the root system has been shattered. If the root system is in condition to use the available food it will not extend itself and the life of the tree will be jeopardized if fertilized when set out.

Spraying the young orchard should not be neglected. For the first two years we found it more economical to apply lime-sulfur with a paint brush than by the spray nozzle. This kept the trees free from scale and prevented injury from rabbits. One summer spraying with kerosene emulsion for aphids and perhaps one spraying for powdery mildew with atomic sulfur has been all that was necessary to keep the trees clean and thrifty.

Sonoita, October 8 and 9, Santa Cruz county fair and vicinity.

Elgin, October 11.

St. David, October 12, 2 p. m., farm, R. W. Boyle and Chas. McRae, leaders.

Benson, October 13, H. A. Robertson and A. H. Scott, leaders.

Cochise, October 14, B. O. Payne, leader.

Pearce, October 14, R. Mears, leader. October 15, 1:30 p. m., farm, F. W. Watkins, leader.

McNeal, October 16, 2:30 p. m., farm, C. E. Sampson, leader.

Whitewater, October 16, 7:30 p. m., schoolhouse, W. J. Shultz, leader.

Douglas, October 18, P. Adams, leader.

Douglas to Rodeo, October 19, W. A. Stuart, Rodeo, New Mexico, leader.

Portal to San Simon, October 20.

San Simon, October 21, Guy B. Sisson, leader. October 22, local fair. October 23, 2 p. m., office of farm adviser.

San Simon to Willcox, October 25.

Willcox (Kansas settlement), October 26, 2 p. m., farm, J. C. Miller, leader.

Willcox, October 27, 2 or 7:30 p. m., farm or schoolhouse, A. L. Cropper, leader.

McAlister, October 28, 7:30 p. m., schoolhouse, W. A. McAlister, leader.

Cochise, October 29, 3 p. m., meeting with advisory council of county F. I. A., B. O. Payne, leader.

Pearce, October 29, 7:30 p. m., Stronghold schoolhouse, R. Mears and A. A. Benedict, leaders.

Whitewater, October 30, boys' and girls' clubs.

Whitewater, October 30, 7:30 p. m., schoolhouse, W. J. Shultz, leader.

THE AVOCADO AND THE BABCOCK TEST

Written for California Cultivator
By J. Eliot Coit.

Within the last year a great many complete chemical analyses of avocados have been made. A number of these were reported in bulletin 254 of the University of California experiment station. Recently many additional analyses have been made. It has been shown that there is a very great variation in the oil or fat con-

tent of fruit of different varieties or seedlings. While the protein content shows some variation also it is a fact that the greatest food value of the avocado is due to its fat content.

Complete analyses require considerable labor and expense as well as the services of a chemist, and some simple and cheap method of testing the fruit for fat which might be used by the growers themselves is much to be desired.

In thinking this matter over it occurs to the writer that the Babcock test, which is universally used by dairymen for determining the percentage of butter fat in milk, cream, and cheese, might be adapted for use in testing avocados. Accordingly, a series of experiments was performed, the results proving quite satisfactory. At first the same Babcock equipment, size of sample and strength and acid commonly used in soft cheese tests was tried out. It was found that 17.5 cubic centimeters of acid was not quite sufficient to dissolve all the cellulose. When this was increased to 19 cubic centimeters the solution of light matter was complete and the column of fat could be measured accurately to one half of one per cent. There are a few minor matters of technique to be experimented with before the test is standardized and directions printed.

It ought to be possible to have these tests made at any dairy or creamery by any one familiar with milk testing, and when run in series they need not cost more than from 25 to 40 cents each. A small hand tester may be bought for six or eight dollars and by following directions any farmer may easily make the tests himself just as the dairy farmer tests his milk occasionally to keep check on the creamery.

There are cow testing associations all over California and why may we not have an avocado tree testing association with prizes offered for the seedling testing the highest percentage of fat? At any rate the idea is suggestive and will be followed up and a report made at the avocado growers' association meeting in Los Angeles in October.

Farm Bureaus

Stanislaus County, C. M. Conner, Adviser, Modesto

Mountain View, October 1.

Modesto, October 4.

Turlock, October 6.

Oakdale, October 8.

Denair, October 11.

Riverbank, October 13.

Empire, October 15.

Wood Colony, October 18.

Hughson, October 20.

Patterson, October 22.

Salida, October 25.

Claus, October 27.

Hickman, October 29.

Alameda County, C. W. Rubei, Adviser, Hayward

Hayward, October 4.

Castro Valley, October 6.

Murray Township at Livermore October 9.

Irvington, October 19.

Pleasanton, October 21.

Centerville, October 22.

Newark, October 25.

Niles, October 27.

Directors meeting at Hayward, October 30.

Cochise and Santa Cruz Counties, Arizona, A. L. Paschall, Adviser, San Simon.

Seed selection, fall and winter preparation of soil, and poultry will be the main subjects for discussion and demonstration for this month.

One of the main requirements for successful farming in Cochise and Santa Cruz Counties is the proper planting and cultivation of adapted, acclimated crops. All of our cultivated field crops can be greatly improved in quality and yield by systematic seed selection. We should select and breed up pure strains of seeds on a community basis.

Willcox, October 1, 2:30 p. m., Cropper's farm, A. L. Cropper, leader.

McAllister, October 2, 7:30 p. m., schoolhouse, W. A. McAllister, leader.

San Simon, October 4 and 5, Guy B. Sisson, leader.

October 6 and 7, en route to Sonoita, etc.

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Santa Ana
District Fair

Oct. 11th-15th

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Catalog and Garden Guide mailed free.

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The Lawn and



Flower Garden

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator
By O. M. Morris.



GARDEN work this month will consist principally in renovating garden and planting bulbs. Old bulb beds should be thoroughly raked up and if possible a new mulch of manure spread over them and thoroughly watered down. This will apply to all of the hardier classes of bulbs such as daffodils, or any of the narcissi, tulips, Spanish iris and the like. All new planting may be made immediately.

Two of the most popular bulbs in Los Angeles and vicinity are the daffodil and Spanish iris. These two classes have proven very hardy and once planted last for years without any particular care and are always sure bloomers. Among the popular varieties of daffodils of good color, large flowers and long stems, probably the Emperor stands at the head, with Sir Watkins and Empress close seconds. In Spanish iris nearly everyone has his preference as to shades, but for blue Cornflower and Blue Flag are the most popular varieties. In yellows Cajanus and William the Second are the best. While these are by all odds the best liked one may have nearly any shade in this flower from white through the different markings of blue, and blue and yellow, lavender, etc.

For border plants the zephyranthus has an evergreen growth and blooms throughout the summer and early fall. In fact, it is considered one of the constant bloomers. It has grass-like foliage and is highly recommended. Friesias, oxalis and sporaxis are also serviceable but their blooming period is short.

The Cottage and May Flowering Darwin tulips are all very satisfactory in this climate. The early flowering being too restless to come into bloom make very short stems and are practically worthless in our warm climate while the late flowering classes all do well. Undoubtedly the best scarlet is

the long-stemmed Gesneriana. These have strong, stiff stems, frequently two feet in length. There are many good varieties of these and, as with the tulip, one may choose most any shade, including dark crimson, pink to pure white, yellow, buff and chocolate brown.

Hyacinths are more difficult to handle and if grown in pots should be set in shade for a couple of months and then brought to the light and given plenty of water. They may be grown in the open ground with good results if the bulbs are planted about three inches deep and the ground mulched over with straw or litter to a depth of two or three inches more. Keep the bulbs cool and hold them back as much as possible until they make strong growths.

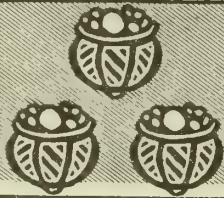
Good hardy bulbs of gladiolus can be planted for early blooming. The gladiolus is adapted to all seasons' planting. Planted in succession one may obtain flowers practically throughout the entire year.

There is a large list of the smaller class of bulbs which may be planted at this season.

Summer flowering lilies such as the Easter lily and the Japanese lily may be planted. The sooner they are planted the earlier will they bloom in the spring and summer. If planted out in the ground they should be set from six to eight inches deep. Get them away from the surface and they will last for a number of years and thrive. If set close to the surface earth worms and insects soon get the best of them. Some of these bulbs are better if planted a foot deep. Our native lilies such as Humboldt should go down in the ground at least one foot and it is best to put a small shovel of leaf mould around the bulb, especially if the soil is heavy.

In the regular flower garden the calendar for last month will still hold good. Pansies and stocks for early winter flowering should go in at once, also winter flowering sweet peas. In another 30 days the summer-flowering variety of sweet peas should be planted.

Small Fruits



Vegetables

THIS MONTH IN SOUTHERN CALIFORNIA

Written for California Cultivator
By O. M. Morris.



ALL hardy vegetables such as turnips, beets, carrots, radish, lettuce, chard, kale, kohlrabi, Brussels sprouts, endive, cabbage and cauliflower can be planted during October. As a winter crop turnips, beets and carrots are splendid field crops for stock should a market be lacking for them. Large plantings of these may be made at this time with perfect safety.

If sure of a market cabbage is a good crop to grow during the winter months. Earlier varieties will mature in about five months. The best are Winningstadt and Cannon Ball.

In protected places where winter frosts are not too severe one may reasonably expect good success with peas. For such locations we would also recommend small plantings of Canadian beans providing they are planted at once. These may be injured somewhat by early frosts, but as a rule will set beans in due time, and though they may lose their foliage the beans may be held on the vines until the holiday season when they will bring good prices. There is always a

scarcity on the market of curly and red cabbage. The same is true of Brussels sprouts and kohlrabi. The sprouts have proven especially profitable where they grow well.

CORN EAR WORM



THE pest of worms which has infested ears of corn has been most perplexing to the gardener and to the grower of field corn. This worm is hatched from eggs laid by an adult moth which is both a day and night flier. The moth is about an inch long and her eggs are a yellowish white. The larva is a most repulsive worm

which is sometimes two inches long, yellowish to brownish in color with longitudinal gray and white stripes. After the depositing of the eggs on the silk end of the ear of corn the "worm" hatches and eats its way into the tip of the ear. Sometimes these worms destroy almost the entire ear. The pest is not exclusively one of corn, however, for it takes tomatoes, eating holes into the bottom or sides and causing decay. It also works in the South upon the cotton bolls and is there known as the boll worm. Other food plants of the worm are alfalfa, beans, cabbage, geraniums, gladiolus, grapes, malva, okra, many of the fruits, pumpkins, squash, etc. The usual remedy given for this pest is to plant a larger crop than it is desired to harvest in the hope that the excess rows of corn may save the remainder of the crop from attack. Spraying has not been entirely successful but we were recently shown a field of green corn in the experiment grounds of the German Seed and Plant Company at Montebello, Los Angeles County, in which about three-fourths of the rows had been treated in an effort to control this pest. The remainder of the rows had not been treated and in going through the field and plucking many ears in the part which had not been treated we found in more than a dozen ears only one which was not attacked by the worm. In the larger portion of the field which had been treated with a high grade arsenate of lead more than 90 per cent of the ears were free from attack. To us it was a remarkable showing of control of a pest which is usually considered beyond control. The treatment consisted of placing dry arsenate of lead without any dilution in bellows and blowing the material over the ear of corn when the formation of silk was first discovered. This treatment was repeated some three times at a total cost per acre of less than \$5, practically nothing compared to the benefits received. Other experiments which have been tried of placing the dry arsenate of lead in sacks made of light muslin or cheesecloth and shaking over the ears show results almost identical with those in which the arsenate was blown over the corn with a bellows. We trust this experiment will be repeated by many corn growers with next spring's crops. If the moth does deposit its egg on the outer part of the husk and the larva must eat its way in through the husk then there is a fighting chance, and certainly this method could not be simplified for the veriest novice can hardly err in application of the remedy.

To give more exact information we have later received more definite figures: Out of 218 dusted ears there were 197 free of infestation and 21 wormy. This is 90.3 per cent free.

From 150 of the untreated ears there were eleven with no worms and 139 wormy or only 7.33 per cent clear. Visalia, 92½.

Prize-Winning School

The awards of the 1915 Beautifying Committee to high schools in Class No. 1, were: Inglewood, first (\$400); Covina, second, (\$200); Venice, third, (\$100); and Montebello, fourth, (\$75). All these were planned by Ernest Brauntun. A full set of plans and specifications were furnished the first, second and fourth; and the third was advised how best to compete, during a visit to the grounds.

Among the other prize winners Ernest Brauntun was official adviser to the following: Santa Monica High School; Grant and Garfield Schools, Santa Monica; Central School, Redondo Beach; Central School, Venice; Lawndale; and Zelzah.

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Ernest Brauntun

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Choice Two Year Old Rose Plants

Mr. Mitting, an expert horticulturist, says: "I would rather plant out two plants of roses two years old than twelve small rose plants from two inch pots."

We offer the following roses, all summer bloomers, at special prices: Kaiserin Augusta Victoria, white, 30c; Madame Caroline Testout, pink, 35c; Ulrich Brunner, red, thornless, 50c; Killarney, pink, 35c; Madame Ravary, yellow, 25c; Mrs. Aaron Ward, Indian yellow, copper and gold, new, 50c; Duchess of Albany, red, 35c; Frau Karl Druschki, white, 40c; Perle von Godesburg, lemon yellow, 30c; La France, 25c; Antoine Revire, pink, tinted with yellow, 40c; La Detroit, pink, shading to soft rose, 40c.

The above twelve beautiful roses, two years old, three feet high, bushy, with roots, sent by express PREPAID, for \$3.00.

Climbing Roses

American Pillow, pink, single flowers, 4 inches across, 30c; American Beauty, pink, 30c; Madame Caroline Testout, pink, 40c; Meteor, red, 25c; My Maryland, glowing pink, 40c; Hiawatha, Hybrid Wichuriana, 35c.

The above six climbing roses, three feet high, heavy bushes, with heavy roots, sent prepaid for only \$1.50.

Berrydale Gardens, Box 685, San Jose, Cal.



COMING EVENTS



MOST vitally important is the month yet to come at the great exposition at San Francisco. This may seem a broad declaration in face of the many important conventions that have taken place there and of the number of noted diplomats and statesmen, who have brought their views to the visiting world at this greatest of international expositions. But it is agriculture that makes a country. Without it a nation is nil. The boundless resources of the United States of America are what have made her today supreme in the financial realm. Her climate, her soil, her waterways, her railroads have made her a land of plenty and abundance.

October, therefore, which is to be farmer's month at the exposition, will stand above all the other months as a period which will live in the commercial annals of the world, for agriculturists and stockmen of all nations will meet to view the product of efficient husbandry and to discuss the ways and means by which the efficiency was achieved.

The month began on the afternoon of September 30, which was opening day for the great horse show. See Mr. Guilford's account of this on leader page of this issue. During this month and November there will be 55 big agricultural and live stock conventions. Most of these come in connection with the live stock shows. We have given the dates of these conventions before, but in order that they may be before our readers we repeat:

Horses, mules and asses, September 30-October 13; cattle, beef and dairy, October 18-November 1; sheep, goats, and swine, November 3-November 15; car lots of live stock, November 11-November 14; poultry and pigeons, November 18-November 28; dogs, cats and pet stock, November 29-December 1; children's pets, December 1-3.

The American Shire Association people have finished their sessions; the American Automobile Association is now in session. The California Conference of Boys' and Girls' Agricultural Clubs occurs on the 16th; the American Forester's on the 18th; Western Forestry and Conservation Association on the 19th and 20th; California State Grange Patrons of Husbandry, 19-20; American Forestry Association on the 20th; Ayreshire Breeders' Association on the 20th; American Shorthorn Breeders' Association, October 22; American Aberdeen-Angus Association October 25; Red Polled Cattle Club of America, October 26; Polled Durham Breeders' Association, October 26; California Creamery Operators' Association, October 28-30.

Secretary Darst of the American Milch Goat Record Association writes that the eleventh annual meeting of the association will be held in Congress Hall, Panama-Pacific Exposition grounds, at 2 p. m., Wednesday, November 3, 1915. All are cordially invited to be present.

With the closing date of the exposition less than two months away there are still 115 conventions and congresses scheduled.

Closing Date of the Panama-Pacific Exposition at San Francisco December 4.

More than 50 live stock and poultry associations will gather at the exposition for conventions, exhibitions and competitions during the latter half of

October. Thousands of horse, cattle, sheep, swine, poultry and pet stock fanciers and breeders will gather to display their choicest products and to hold conferences which will cover all phases of animal industry.

October is said to be the finest month in the year so far as climate is concerned in San Francisco. Be sure and see the exhibits of everyone who carries announcements on this page. We have seen them and we know they are educational.

Do not miss hearing the Philippine Constabulary Band. There are 90 musicians in this great organization.

The aeroplane stunts are still thrillers, especially at the moment when the birdman takes a drop straight for the earth.

ENTRIES AT P. P. I. E.

Superintendent T. E. Quissenberry writes regarding preparations for the great exhibit at the Panama-Pacific poultry show. He calls special attention to the need for poultry people to remember that all entries will close on October 15 and that there will be no promiscuous sending out of entry blanks, but he advises everyone who may wish to exhibit to write at once for these blanks. In his "last call" he says:

"Remember that the entries for the Panama-Pacific Poultry Show close on Friday, October 15. If you haven't time to write for entry blanks, phone or wire the variety, the sex and the number of each, and we will gladly reserve space for your birds. Send your entries today for it is dangerous to delay. Entry blanks will only be sent out on request so don't wait for them to be sent you. They should be postmarked not later than October 15. It is not at all necessary to select the individual birds until the date of shipment. For example, if you have two cockerels and you are in doubt as to which to enter, select a new band and enter a cockerel under that number. Then when you are ready to ship place that band on the cockerel and your cockerel's number will correspond with our books and with your original entry. It is absolutely necessary for you to send the name of the variety and give the sex and band number of each at the time of entry, but you can hold these bands and place them on your birds at the time of shipment. Be sure to keep a copy of your entry blank and get the correct band numbers on the right birds. If you haven't an entry blank send in an entry on your own letterhead. Give your name and address, the variety, the sex and the band numbers to correspond. A blank will be filled out for you and shipping tags sent. The entry fee to pay the cost of feeding, watering, cooping, handling and caring for birds is \$1.50 per single bird, \$4.00 per pen of one male and four females, and \$7.50 for large display cages large enough to hold 10 or 12 birds."

As to express rates he suggests that by shipping light wooden coops it is possible to get from ten to 12 fowls in each 100-pound shipment. The round trip express rates for each 100 pounds to San Francisco and return from New York is \$20.80, other eastern towns running about the same or possibly slightly less. Kansas City running \$17.10. The round trip rate from Los Angeles per 100 pounds is \$5.20, Seattle

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Superintendent Quissenberry urges that Poultrymen's Day, November 16, be observed by every poultryman of the country. One of the most valuable competitions will be in the utility or egg type classes.

A well known expert has been engaged to judge the utility poultry. He will give demonstrations each day in judging and selecting the laying hen. An entry fee of 50 cents per bird will be charged in this class for either male or female, but these birds are not entered in the exhibition class. The exposition will give first, second, third, fourth and fifth certificates or ribbons in the following classes: Best egg types in every variety of the Mediterranean classes; best egg types in all other classes; best dual purpose types in all other classes; best meat types in all other classes.

PREMIUMS

There should be a fine showing of all kinds of live stock drawn by the liberal premiums which are divided as follows:

Cattle show, \$93,000 in premiums; sheep and swine, \$50,000 each in premiums; poultry and pigeons, \$25,000 in premiums; dogs, cats, pet stock and children's pets, \$10,000 in premiums. The competitions will be judged by 130 leading breeders and live stock experts of America.

The Bloomington Fruit Association in San Bernardino County, has elected the following officers: President, Lon F. Chapin; vice president, G. Leiser; secretary-treasurer, D. C. Swartz; assistant secretary, Geo. O. Complin; manager, A. G. Burch.



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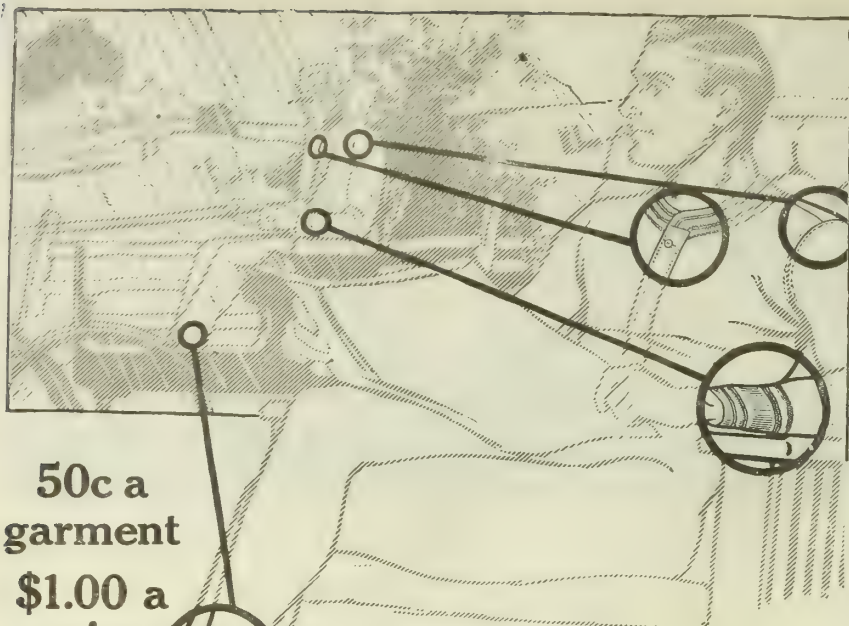
It is 10,000 times as large as the largest one you ever saw. Learn how to kill him.

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Any garment offered as "Hanes" is a substitute unless it bears the "Hanes" label.

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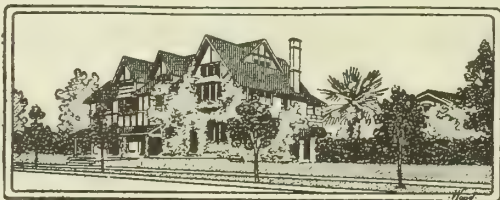
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The Tenth Year of Cumnock Academy Opens September 28

Parents who are planning to have their daughters enter the school this year should consult immediately in regard to registration. Call, telephone or write for complete information.

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is an accredited school, its graduates being admitted to the better universities and colleges without examination. Two courses are offered—college preparatory and general. Carefully chosen faculty, whose work is supplemented by special courses given by the CUMNOCK EXPRESSION SCHOOL faculty.

A sub-preparatory department, offering the seventh and eighth grade subjects, is also maintained.

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General Agriculture



REMEDIES FOR FLEAS



Of the approximately 400 species of fleas known to exist the human flea, the dog flea, the cat flea, the rat flea, which carries the plague, and the sticktight flea are the varieties which most commonly affect human beings and domestic animals. The sticktight flea differs from the others in that when it has once attached itself to a host it remains with its mouth parts immovably imbedded in the flesh. Chickens suffer in particular from this pest and for this reason it is sometimes called the chicken flea. It is frequently seen in dense masses also on the ears of dogs and cats. It is difficult to loosen it from its hold, and its destruction therefore presents some difficulties. Fairly good results are obtained from the local application of kerosene and lard in the proportions of one part kerosene and three parts lard, but if used too freely this may injure poultry.

In the case of other species the insects hop about much more freely and may or may not, therefore, be found at any given time on their hosts. When dogs or cats, however, are found to be suffering, a bath in a three per cent solution of creolin will probably be found to be effective. A sufficiently accurate method of making such a solution is to add four tablespoons of creolin to each gallon of water. Warm water should be used and the animal placed in a tub with the solution in it. A stiff brush should then be used to work the solution into the hair, particular care being taken to wet the fleas on the head of the animal. The bath should last five or ten minutes, after which the creolin should be rinsed off and the animal washed with warm water and soap. This treatment is desirable for cats and will prevent the skin of the most delicate animal from being burned. Finely pulverized moth balls worked into the fur of the cat are also useful. The naphthalene in the moth balls drives the fleas out of the hair. They emerge in a stupefied condition and can then easily be killed. Insect powder, sometimes called pyrethrum, buhach, or Dalmatian insect powder, may be used in the same way. Fresh, unadulterated pyrethrum is necessary to secure satisfactory results.

It is useless to attack the adult flea if no attention is paid to its breeding places. The flea may lay its eggs upon the host animal, but in the case of the human flea most of the eggs are probably deposited while the insects are in their nests somewhere in the vicinity. In houses the cracks of floors or under matting or carpets are favorite places. The conditions under buildings are often favorable for breeding. For this reason it is desirable that dwellings, stables and sheds should be so arranged that cats, dogs, chickens and other animals that harbor the pests cannot go beneath them to sleep. Dirt floors in chicken houses and sheds furnish more favorable conditions than wooden floors, and young fleas are often found in the straw, feathers, and waste in such places. Where chicken houses and sheds are found to be infested the manure should be hauled away and spread in fields. Unnecessary rubbish and dry animal matter should be piled up and burned. The ground, the floors of outhouses, and similar places where the breeding is supposed to occur should be sprayed with kerosene or crude petroleum sprinkled about. An inexpensive preventive measure is the liberal use of salt scattered about the breeding places and then wet down. Semi-weekly thorough wettings with water have been found to keep fleas out of poultry runs in Texas and salt water from the Gulf is used extensively for this purpose along the coast.

Where it is supposed that dogs or cats are largely responsible for the infestation it is desirable to compel them to sleep in a definite place in order that the eggs from the fleas be concentrated and thus more easily destroyed. A few gunny sacks or a mat for infested animals to sleep upon will be found to contain a great majority of the eggs and these can be destroyed by shaking the cloths over the fire or exposing them on a bare spot to the rays of the sun.

Where fleas are found to be breeding in the house itself the first step is to sweep up all the dust and burn it. Floor coverings should be removed, aired, and beaten, and the floor scrubbed with strong soap suds. Various insecticides have also been found to be effective, but many of these are either dangerous to health or injurious to various articles.

Fumigation with sulphur fumes or hydrocyanic-acid gas has also been employed to rid dwellings of fleas. Both of these have the additional advantage of killing rats and mice as well as fleas but sulphur is open to the objection that it corrodes metal and injures plants. Hydrocyanic-acid gas is so deadly that its use except under expert direction is quite out of the question. In fumigating with sulphur four pounds to each 1,000 cubic feet of space should be used. The sulphur is piled up cone shaped in a pan, which is placed in a larger pan or tub of water to avoid fire from the heat generated. A depression is made in the top of the cone of sulphur, a little alcohol poured into it, and a match applied. The room to be fumigated should be tightly closed beforehand and kept closed from 10 to 12 hours. At the end of that time the doors and windows should be opened from the outside and the room thoroughly aired before it is entered.

THE "PICKING UP" HABIT

Written for California Cultivator
By Sacramento Valley Contributor

An empty second-hand grain sack may be worth a nickel, five cents, or it may be worth only three cents. There is a great difference in the treatment these old sacks are accorded on different farms. On some they are carefully picked up and put away, and every one is admonished to bring them in from the fields or wherever they may be used or found, and there is always a supply of them in their proper place for whatever use they may be desired.

On other farms the idea seems to prevail that so small a matter as a five or three-cent sack is too trivial to pay any attention to, but if old grain sacks and all manner of other things are left around a place everything is slovenly and unkempt and there must be many, many little wastes that in the aggregate amount to a goodly sum in a term of years.

To have a neat, well kept place every one who has to do with it must be impressed with the necessity of never passing by the things that litter up the premises without picking up the stick or sack or can or piece of iron that is where it should not be, and put it where it should be.

There must be some one to lead in the good work, however, and whoever this may be he must not be disappointed if it seems at times that he is picking up for the whole outfit, but he must keep on, and gradually every one will get the habit.

IMPOSSIBLE

His Wife—Dearie, do you think hoop-skirts will ever come in again?

Her Husband—Not in this apartment, love.—Judge.

Economics on the Farm

RURAL CREDIT POSSIBILITIES

THOUGH "Rural Credits" sounds, as do many other catch words, quite attractive, there are certain things to consider before voting about them.

If the actual farmer, or would-be farmer, is to have money loaned him below market value, why should not the merchant, the miner, and the mechanic all enjoy the same privilege?

Where can the state obtain any "cheap money" to loan to farmers except by taxing its citizens therefor?

Will there not be a tendency to increase the number of farm mortgages if money can be obtained by farmers below current rates?

If the farmer, for example, can borrow money on mortgage at 3 per cent and lend it at 5 or 6 per cent, would not he be a fool if he did not borrow?

If he could not get 6 per cent in California, could he not invest in foreign securities at 6 per cent, and would that not eventuate in reducing capital in this state?

Do you know that Argentine tried a similar proposition, issuing land bonds, or cedulas; four series of which ran down to as low as 8 cents on the dollar, and had close relation with the world panic of 1893?

Lastly, after all this fine-sounding talk of bringing "the landless man and manless land together," is it not a fact that, in many lines of production the grower finds it very difficult to make his annual expenses because of the low price of produce and high cost of labor? Why then invite increased production?

I asked W. Niels Nielsen of Australia, at a public meeting, if the method of rural credits prevailing there had caused an exodus from the cities to the farming lands; and I received no assurance that even there the landless man was over eager to work the manless land!—Edward Berwick.

* * *

We would not presume to answer all of Mr. Berwick's questions, but as each one is entitled to his own opinion we at least give ours on one or two of the points raised.

Beginning with Mr. Berwick's "lastly," we will agree that the "grower does find it very difficult to make his annual expenses because of the low price of products and high cost of labor" but think Mr. Berwick should have added "and capital." The high cost of capital has been even more embarrassing to the producer than has the high cost of labor, and Mr. Berwick would hold that cost up.

But going to the first of Mr. Berwick's questions as to why the merchant and the miner and the mechanic should not enjoy the same privilege, we note Mr. Berwick is very careful not to refer to the banker. So may we ask: Why should any of these producers of our nation be compelled to pay for the use of his capital three, four and five times as much as do the bankers? Our nation, our state, and many of the counties are loaning money to banks at one and a half and two per cent. Why are these producers deprived of this same privilege? We presume Mr. Berwick will say: "But the bankers give ample security for this money which they borrow." Then we ask of him, "Should it not be made possible for the farmer to give a security which will be ample and which will enable him to do business on as reasonable a basis as the large handlers of money?" The trouble is in this matter of finance, it is born in our people to look at the rights of the extremely wealthy as sacred and to feel that the common people should not aspire to any such rights. We are glad to say some of us are awakening to our needs and to our rights and will demand them. California has millions of dollars to loan. If she does not capitalists do have and will loan through our state just as they did the \$5,000,000 which was

needed by the state to encourage a great exposition. It is within the province of this same state to so secure that which will enable her farmers to properly equip their farms. It has been shown that not one-half of the farms of America are today equipped with labor-saving appliances. In other words, our produce is costing the farmer so much that he is unable to make a profit. Until he is financed this excessive cost will continue.

As to the next question, "Will there not be a tendency to increase the number of farm mortgages?" We cannot say. We think, and we sincerely hope, there would be, and for the reason above given that too many of our farmers are now under-capitalized and illy equipped. We grant that in the eyes of many the word "mortgage" expresses something most terrible, but with the knowledge that practically no nation nor great business enterprise is financed without credit and that if there were no business done in this

world except by those with the coin in their hands, there would be more hungry people than there are today. The shiftless or the careless farmer who makes up the season's losses, caused perhaps by his own shiftlessness, by mortgaging his farm, or possibly the one who places a mortgage in order to secure money for a wild-cat scheme or for pleasure, has perhaps given just cause for this feeling that a mortgage is to the discredit of the mortgagor. But it is so well known that some of our most successful farmers are doing business with borrowed capital that there is no reason for the blind prejudice against the word "mortgage."

As to the farmer borrowing at such an exceptionally low rate of interest that he will be tempted to turn around and buy foreign securities at a high rate of interest, "we should worry!"

As to the Argentine failure, frankly we do not know.

Neither do we anticipate that American believers in justice to the producers of the country will devise a scheme which will result disastrously. There have been too many rural credit institutions which have secured reasonable rates to the producers and which have succeeded that it is not necessary to found such an institution on principles which lead to failure. There is no call for philanthropy. There is need, still more, there is

necessity, that the food products of this country shall be produced at a low cost, and Mr. Berwick is the last who should oppose such a movement. —Editor.

DRESSING FOR WOODWORK

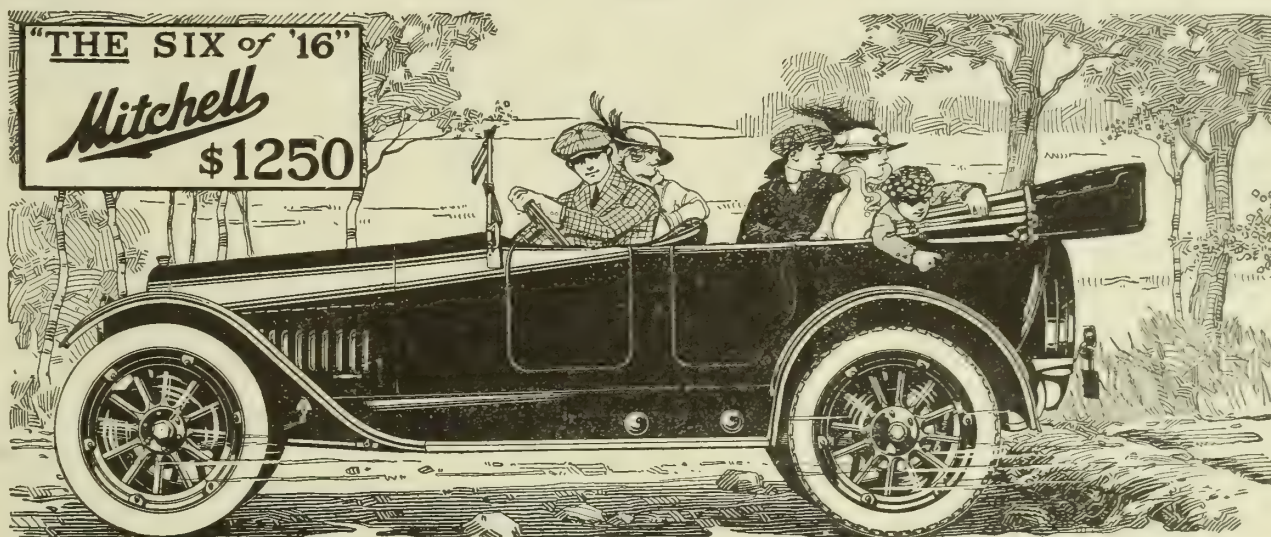
While at the Panama-Pacific exposition we noted the natural and consequently beautiful appearance of the woodwork in the Lumbermen's Building, south of the Palace of Horticulture. Asking the attendant regarding the dressing which was used on this woodwork he gave us the following treatment: "The woodwork should be thoroughly cleaned and sandpapered, then apply two coats of a solution composed of four parts white beeswax, one part carnauba wax (from Brazilian wax palm) and 15 quarts of turpentine, thoroughly rubbed after each coat."

On a farm where live stock is kept greater attention must be paid to cleanliness than on one on which there is no live stock. This is particularly true of a dairy farm for the success of which thorough sanitation is a necessity.

PRETTY BLUE

Saplee—What is this Blue Bird we hear so much about?

Snappleigh—The Dove of Peace.—Judge.



What Happened to That Bump?

We saw it—were braced for the shock—and nothing happened! Over the obstruction we went as if on wings. This surprise comes to all who first ride in a Mitchell. Later you get accustomed to the fact that all roads are smoothed out under the tremendous swing of this new "Mitchell SIX of '16."

One enthusiast on Mitchell *comfort* says the overwhelming success of this new car is due to its easy riding qualities. This is the first car built in which the passengers in the rear seat ride as comfortably as the driver.

Another ascribes it to the Mitchell *action*—the quick getaway, the instant stop. Other owners enthuse over Mitchell *appearance*: long, symmetrical lines suggesting power and poise.

The Mitchell is the greatest car value ever offered. It answers the demands of all the family: style and easy riding for the "women folk," speed and "snap" for the boys; and the long life and strenuous service which all practical needs demand. This all-around usefulness accounts for the fact that "every 'SIX of '16' car sells another."

See the Mitchell dealer near you. He has this new "SIX of '16" at your disposal for a trial spin. Get the personal touch.

Three-Passenger Roadster \$1250
Five-Passenger Touring Car

Seven-Passenger Body \$35 extra. Demountable Sedan Top, making all-year-round car, \$165 extra. All prices f. o. b. Racine.

Mitchell-Lewis Motor Co.
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Established 1888. Twenty-seventh Year.

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Entered at the Post Office at Los An-
geles, California, as Second-Class Matter.**Thursday, Oct. 7, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**SHORT COURSES**

S This week starts the farmers
short courses at Davis. The equipment
of university farm at Davis is turned
over to farmers of all ages, and not
only the equipment, but the best tal-
ent of the university is at the service
of the farmers who are attending. The
courses continue until the middle of
November.

STATE FAIR

S The state agricultural society is
sending out announcements for the
state fair for 1916. The management
gave way as to the 1915 fair and urged
all exhibitors to center on the great
exposition. Now for 1916 and the big-
gest fair ever. Strength to the arm of
the management and may it be more
than ever a pure agricultural fair. We
appeal for a reduction in vaudeville
stunts so far as possible.

SOME POMP

S An Eastern farm paper is com-
plaining because "Solomon in all
his glory was never arrayed in the
fullness of the pomposity that
accompanies some of the state
governors in their triumphal march
to the Panama Exposition," and then
asks, "Who pays for all this dis-
play?" We may inform our con-
temporary that it will probably pay
its share as will the other taxpayers.
However, it is worth the price, for
California is putting up two great ex-
positions, and the Eastern governors
especially need some of the education
which California can give this year.

FEIJOS

F The comparatively new fruit,
feijoa sellowiana, is now ripening as it
has been for some seasons in various
sections of the state. A Los Angeles
daily paper has referred to "the first

ripe fruit" as being produced this year
in this state. This report in turn has
been quoted by a fruit journal. Hence
a subscriber suggests that we make
correction and call attention to the
fact that this luscious fruit has been
ripening here for many years. Better
than all, it has proved itself capable
of withstanding low temperatures.
During the cold weather of 1913 but
little injury was done to it.

WALNUT PRICES

W The new prices named by the
Walnut Growers' Association are given
on market page. It will be seen that
Number Ones have been fixed at 13.6
cents per pound. This is nearly three
cents under last year's prices, and we
presume, as with the almond situation
in the north, non-members of the asso-
ciation will criticize. However, those
handling the affairs of the association
have looked into all the marketing
conditions so far as possible and we
believe have done wisely. The asso-
ciation controls practically three-
fourths of the nuts in California.

ROW OUR CWN

G There has been a great deal
of talk about dyestuffs and other
things which have been supplied
to this country by other nations.
The manufacturers have been com-
plaining bitierly because of the
loss of these imports due to the
war. Consequently there is much talk
about producing our own. As a mere
hint, may we bring up the matter of
sugar beet seed?

We have depended upon Europe en-
tirely for our supply. When Califor-
nia's perfect conditions for producing
sugar beet seed are considered we be-
lieve it is pertinent to ask, "Why do
we not produce our own?"

SAN DIEGO'S EXPOSITION

S The San Diego exposition is
drawing a remarkably fine attendance.
It has now been in operation for over
ten months. The visitors in that time
have numbered well up towards 2,000-
000. The daily average for Septem-
ber was something less than 6,000.
Compared with great world's exposi-
tions this is not large, however, this
is the exposition of the Southwest. We
have come in contact with many peo-
ple who have been there, and almost
invariably has come from their lips, "It
is the handsomest little exposition
ever." Its full year will be up on the
evening of December 31, and it should
be visited by everyone who can pos-
sibly arrange to go.

PEST NUMBER

P Scarcely a mail comes to the
Cultivator office without some parcel
containing an insect or fungus infested
leaf, stem or tuber, with the appeal
"What is it and what can we do for
it?"

It has been the custom of this paper
to issue at least every two years a
special number giving methods of
handling all of these pests. It will be
issued this year on Thursday, Novem-
ber 4. This time is chosen because of
the appeals coming to us for help to
prevent peach blight and similar trou-
bles. Peach blight is a serious pest in
California. The issue in question will
give methods of handling it. The first
treatment should be during the last of
the month of November or the early
part of December. This one issue will
be worth a year's subscription price
and should be filed for future refer-
ence.

OUR COVER

O The opening nuts shown on the
cover page of this issue of the Culti-
vator are typical of the season. Also
they afford an opportunity to call the
attention of our readers to our cover
scheme. The new cover has, by the
way, received many compliments rang-
ing all the way from "classy" down, or
up as the case may be, to "exceptional-
ly fine." The Cultivator's improved
appearance is not all due, however, to
the design on the cover but to the
paper stock on which it is now being
printed. We have called attention to
it before, but hope our friends will par-
don us for again referring to it.

The new year is coming and during
it we wish our family to grow larger
than ever. This is the subscription
period and we suggest to our subscrib-
ers that the word be passed along to
their neighbors as to the worth of the
California Cultivator. We hope to
make it better than it has ever been.
Its motto will still be, "By the farmer,
for the farmer." In other words, we
wish to secure and will secure from
the most practical men in California
points which will help to make Cali-
fornia farming more profitable.

As always, we will stand by cooper-
ation. We hope to aid in securing
rural credits and to advance recogni-
tion of the need for better marketing
methods. To that end we ask that
all of our subscribers join us in a cam-
paign for better class goods which
shall always be maintained at the
same high standard.

Again we say, pass the good word
along. If you have criticism, pass the
word to us and we will endeavor to
merit the friendship of our patrons,
and make more complete "The Cali-
fornia Cultivator Covers California."

RURAL CREDIT

R We have received most hearty
commendation of the position taken on
this page last week on rural credits,
especially with reference to the
ground taken by Dr. Elwood Mead and
ex-Ambassador Herrick. We do not
like the terms, "state aid" and "fed-
eral aid," but we do believe fully in
the state or nation giving what is
usually termed "aid" in financing the
farmers. Again, we hardly like the
term "financing" for it bears the sug-
gestion of philanthropy. It is not, or
should not be, such; it is merely a
matter of supplying capital for farm-
ing operations on a just basis—which
has not in the past been the case.

To illustrate this point we wish to
refer to an editorial in the Cultivator
of February 11, 1915. In that we de-
scribed the incident of a farmer en-
deavoring to secure \$1500 on his
ranch. We quoted literally from a let-
ter written him by a financial concern
which proposed to make the loan,
"The interest in your section is not
less than ten per cent and the cost of
securing the loan would be at least
five per cent." In addition it was de-
manded that the borrower pay 25 dol-
lars "legal" for making the examina-
tion. This would make the first year's
interest practically 17 per cent. No
farmer or other business man can live
under such charges. There must be
liberation from such conditions and if
the October 26 election does not make
a step towards relief in this matter
we will be greatly disappointed.

To the end that our readers may be
somewhat informed next week's Cul-
tivator will give "Reasons for Better
Methods of Land Settlement and
Lower Interest Rates for Farmers" by
Dr. Elwood Mead of our state uni-
versity.

Agricultural Notes

The first car of grapefruit received
in New York from the Isle of Pines
came through on August 26. Much of
it was too green.

The Potato Association of America
will hold its annual meeting at Grand
Rapids, Michigan, December 1, 2 and
3. In connection the Michigan State
Potato Association will also hold ses-
sions.

An impetus has been given to the
construction of sugar factories and re-
fineries in Cuba. Heavy investments
are being made with the expectation of
establishing American and European
markets.

More than 240 new game laws were
enacted in the various states of the
Union during 1915. In only three
states, Arizona, Georgia and Nebraska
were existing laws allowed to stand
unchanged.

The coming sugar crop on the
French West India island of Gaudeloupe
is promising. Vice Consul J. O.
Florandin, however, reports a prob-
able shortage of labor, as most of the
men are recruited for the French
army. The coffee, cacao, and vanilla
crop prospects are also bright in
Guadeloupe.

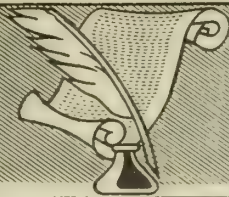
Australian wool growers are antici-
pating high prices and a good selling
center for the next clip. The last
year's clip showed a shrinkage of over
20 per cent, owing to drouth and other
adverse conditions. The coming sea-
son's clip will show a great scarcity of
lamb's wool. The present season's
clip is already beginning to appear at
the market center.

The Chinese government has un-
dertaken to open an exposition of
home products in Peking on October
10, 1915. While domestic articles will
be of first importance, the new Chi-
nese commercial and industrial com-
mission has been endeavoring to get
foreign firms also to make exhibits
which would show to the Chinese the
advance made by other countries in
commercial and industrial enterprises.

Consul Wakefield at Port Elizabeth,
South Africa, reports that a serious
condition confronts the ostrich indus-
try of Africa. At one time highest
grade feathers commanded the record
price of \$550 per pound and fancy
breeding birds sold at \$10,000 per pair.
Prices have been depressed and im-
mense stocks have been accumulated
from recent plucking. The prices at
present are the lowest they have ever
been and are about as follows: Good
grade, unsorted wing feathers range
from \$14.50 to \$19.50; low grade, un-
sorted wings, \$6 to \$12; tails, \$1.20 to
\$3.10; body feathers, 75 cents to \$2.50.
It should be remembered that the
prices quoted are for unsorted parcels
only.

Sugar has proved a big money
maker for Peru the last year. In the
world-wide commercial crisis that fol-
lowed the outbreak of the European
war, it has been the principal support
by which Peru has maintained its eco-
nomic position on a fairly satisfactory
basis. The war had an ill effect upon
nearly all South American industries,
but the producers of sugar reaped a
profitable harvest. Peruvian sugar,
which was quoted at \$2.50 per quintal
of 112 pounds in January, 1914, sold
at \$4.86 per quintal after the declara-
tion of war, an increase of 90 per cent
in value. Great Britain was the prin-
cipal buyer of Peruvian sugar in the
past year, with the United States a
close second.

Agricultural News Notes



of the Pacific Coast

Northern California

Yolo County's output of hops will be fully up to normal.

The Leghorns maintain their lead in the egg-laying contest at the exposition.

Fifteen dollars per ton is the top price for wine grapes at Healdsburg, Sonoma County.

The Almond Growers' Association of Yuba City reports a most successful harvesting season.

From Colfax, Placer County, 75 refrigerator carloads of Bartlett pears have been shipped.

A large party of Napa County dairymen visited the Timms Certified Dairy near Dixon recently.

Hopgrowers of Sonoma County have received to date in excess of \$200,000 for this season's crop.

Chico, Butte County, will produce about 2500 tons of prunes. The packing season began last week.

Woodland, Yolo County, Stock Farm is shipping some fast horses to compete in the races at Salem, Oregon.

The farm bureau of Alameda County has been securing waste lime from the Alvarado sugar factory for use on heavy soils.

The farmers' short courses started at the university farm at Davis on the fourth of this month and will continue until November 12.

Poultrymen are pleased at the high prices to which eggs are being marked. Record prices of the year were made last week.

A modern dairy plant is to be established on what is known as the county poor farm property in Alturas, Modoc County. This land is now owned by C. A. Estes.

The California Wine Association is defendant in a suit for fulfillment of contracts involving \$5,000,000. Suit is brought by growers whose contracts have been abrogated.

Wine grape growers near Geyserville, Sonoma County, are protesting at treatment of growers this year by the California Wine Association and are selling to independents.

Marysville is planning for a rice carnival to be held the week beginning Monday, October 25. In connection with the carnival there will be a poultry show and products' exposition.

Woodland, Yolo County, reports that practically none of the new crop of hops has been sold. The few sales that have been made were at 12 cents per pound, and were merely deliveries under early contracts.

Farmers of the Glenn County farm bureau have been getting together necessary data to show where grades, ditches and road culverts are needed, and a committee has been named to present these needs of the county to the board of supervisors.

Farm bureau members in Placer County are clubbing orders for nursery stock, alfalfa, hay, seeds, and lime in order to secure the best goods at low prices in good season for use. Local lime deposits are being investigated as a possible source of cheap lime for farm use.

Central California

Nearly 3000 acres of orchard will be planted near Hanford, Kings County.

Tulare County's squirrel bounty is causing a terrific slaughter of the squirrel pest.

Oakdale, Stanislaus County, made one shipment of 15 cars of fine fat cattle last week.

The South San Joaquin County Community Fair is being held at Manteca October 8 and 9.

Raisin men have been concerned at threatening and rainy weather during the drying season.

Earlimart, Tulare County, reports the biggest alfalfa crop of the season now being harvested.

Over 200 acres of timber and pasture land were laid waste in the forest fire near Salinas last week.

Plans are being made for the reorganization of the Pajaro Valley Orchardists' Association.

Ranchers and business men of Merced County are now asking for appointment of a farm adviser.

Olive growers of Lindsay, Tulare County, have decided to unite with the California Ripe Olive Association.

Kings County's prune crop will return a half million dollars to growers this year if present prices are maintained.

Ranchers of Deer Creek, Tulare County, are protesting against the formation of the Terra Bella Irrigation District.

It has been suggested that this should be considered grape week when everyone should spread the gospel of healthfulness of California fresh grapes.

Wine grape growers of the San Joaquin valley will unite in a suit against the California Wine Association because of alleged failure to keep contract.

Salinas is making an effort to secure a fund to send the winner in the agricultural contest of the Salinas Union high school bean growing contest to Washington.

Farmers of Santa Cruz and San Benito Counties are making a special effort to secure better roadbeds and to that end have arranged for a good road holiday.

Oakhurst, Madera County, on September 27 held the Mountain Farm Bureau Fair. The produce exhibited was all grown in the mountain sections of the county.

A systematic campaign of education on the eradication of hog cholera in Stanislaus County is being prosecuted by Farm Adviser Connor and Dr. Cady of the state university.

A grain conference was held at Stockton on September 15 by farm advisers from nearby counties to consider the feasibility of shipping grain in bulk rather than in sack. At this conference were present also representatives of railroads, milling companies, and grain buyers. The conference disclosed the fact that California is the only large territory in the United States that still sacks grain.

Southern California

The Rialto Heights Citrus Association has accepted plans for a new packing house.

Riverside anticipates the extension of her beautiful Magnolia avenue to the mountains.

Ventura County has an animal quarantine ordinance which became effective September 15.

There is a possibility of a compromise in the Riverside County-San Bernardino County water suit.

The Fullerton-Placentia Walnut Association packing house opened to receive walnuts on September 20.

Imperial Valley is harvesting its date crop. The majority of the dates now in bearing are of the Deglet Noor variety.

The Walnut Growers' Association of Chino held its annual election last Saturday. The association has 153 members.

Santa Barbara County finds so many violations of the speed laws that she is urging rigid enforcement of speed regulations.

Members of the San Diego County Cow Testing Association report themselves greatly pleased with the first month's testing.

The Tri-Counties Reforestation Committee met at Orange County Park last week. Special consideration was given to the Newlands bill.

Olive growers of Southern California held a meeting in the Los Angeles chamber of commerce rooms last Saturday to discuss marketing problems.

The San Diego Museum Association has been organized for the purpose of preserving some of the more important buildings at the Panama-California Exposition.

Imperial Valley will celebrate tomorrow, October 1st, as "Collar Day." It has been a misdemeanor for the past four months to wear a collar in the Imperial Valley.

Calexico has eight gins, each with a capacity of 500 bales of cotton daily. El Centro has two gins, Seeley two, Holtville two, Imperial two, Brawley one and Calipatria one. The crop throughout the valley is heavy.

Packing houses of the Walnut Growers' Association are busy places. It is estimated the tonnage will be somewhat lower than early reports indicated. The filling of cartons is all done at the packing house in Los Angeles.

The Riverside County Chamber of Commerce held a session with farmers and fruit growers of the Beaumont and Banning sections of the county last week. This organization is endeavoring to secure more general cooperation on the part of producers of the county.

An immense shipment of hogs from the Middle West to Imperial Valley has been held up because of quarantine regulations by State Veterinarian Keane. This shipment is referred to by the Brawley News as a ten-train hog special and regret is expressed that the feeders cannot be brought into the valley for finishing.

The Coast

Portland, Oregon, reports receipts of many cars of Oregon crop of onions.

Montana's harvesting has been seriously interfered with by heavy rains.

An agricultural fair will be held at Casa Grande, Arizona, November 8-10.

The potato crop of Asotin County, Washington, is about two-thirds of normal.

Lettuce is becoming one of the largest crops of the section around Yuma, Arizona.

The fall round-up of live stock is occupying the attention of Arizona stockmen.

There will be an Indian Fair on the Pima reservation at Sacaton, Arizona, late in this month.

Apple growers of the Northwest estimate that their 1916 crop will be double that of this year.

A sale of purebred Holstein cattle was recently made at Spokane, 100 head commanding \$26,000.

One seed concern at Yuma, Arizona, has recleaned 62,000 pounds of alfalfa seed of this season's growth.

Broom-corn growers in the Chandler district of Arizona have asked for lower freight rates to the coast.

Nine cars of Spokane apples were recently purchased by the Harvey eating house system of the Santa Fe.

Morrison Brothers of Chandler, Arizona, last week shipped \$2000 worth of ostrich feathers to New York.

Farmers of Navajo and Apache Counties in Arizona are moving to secure the appointment of a farm adviser.

The Utah State Fair Association has announced prizes for the milk and cream contest to be held during the fair.

A cow testing association has been formed at McMinnville, Oregon. This is the twelfth association in Yamhill County.

Utah beet growers are receiving seeds for the coming season's planting from Russia through Finland and Sweden.

"See Arizona First" has been chosen as the slogan of the Arizona state fair, which will be held at Phoenix, November 15-20.

The Chandler cotton gin is in full operation. Cotton is now selling at 20 cents with the prospect of better prices in the near future.

Washington and Adams Counties in Idaho, and territory along the Snake River in Oregon, held a three-day fair at Weiser, Idaho, September 29-30 and October 1.

Water users of the Salt River Valley Association recently met and protested against certain practices of the board of governors and demanded return of fees which the users declared to be excessive.

The county farm demonstrator recently featured an excursion from Provo, Utah, to another section of the same county. The afternoon was spent in examining farm equipment and operations.



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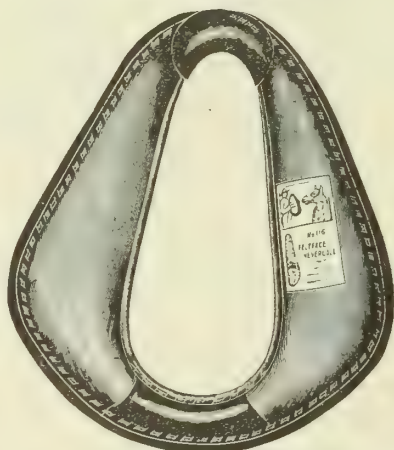
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Live Stock and Dairy



BUTTER SCORING CONTEST

By L. M. Davis

TWENTY-FOUR cubes of butter were entered in September scoring of the educational butter scoring contest held September 29 in San Francisco. The judges were T. J. Harris, official inspector of the San Francisco Wholesale Dairy Produce Exchange; John Sollie, of Eureka, and L. M. Davis, of the University Farm. With the exception of those who do not wish their scores published, results were as follows:

H. L. Beck, Danish Creamery, Fresno, 91½.

P. Bernasconi, Harmony Valley Creamery, Harmony, 90.

B. Berthelsen, Los Angeles Creamery Co., Hanford, 93.

N. Christensen, Dairymen's Co-op. Creamery, Tulare, 92.

J. Clausen, Riverdale Co-op. Creamery, Riverdale, 91½.

G. Decow, Mission Creamery, Peris, 90.

W. J. Grinsell, Libby, McNeil & Libby, Loleta, 94½.

Ed Hooper, Spreckels Market Creamery, San Francisco, 91½.

J. N. Jensen, Visalia Co-op. Creamery, Visalia, 92½.

Simon Koppes, Montague Creamery, Montague, 90½.

L. Larsen, Sunset Creamery, Loleta, 94.

O. Lommel, University Farm Creamery, Davis (not competing), 92.

B. Myers, Los Angeles Creamery Co., San Luis Obispo, 94.

P. Petersen, Valley Flower Co-op. Creamery, Ferndale, 90.

J. C. Phillips, Delta Creamery, Imperial, 91.

G. G. Plunkett, Visalia Creamery, Visalia, 93½.

Wm. Roby, Willows Creamery, Willows, 90.

Minden Butter Manufacturing Company, Minden, Nevada, 91.

The average score of this lot was brought down to 91.27 by the low quality of several entries. Except for cuts under the head of body, over 33 per cent of the entries would have scored above 93, but mechanical defects held the number to 25 per cent. The pronounced "off" flavor noticed in the lower scoring cubes was apparently due in most cases to a poor cream supply. Several of the lots possessed decided "bad cream" flavors, and were already beginning to "go off" and develop the stale flavor found in held lots of poor butter. Feed flavor was noticed in some entries, but there was a marked improvement in this respect over the last scoring. Conditions as to fall feed are being felt in some sections, as is also a shrinkage in the cream supply, which always is a temptation for dairymen to deliver less frequently. A few of the cubes showed a flat flavor, which can hardly be classed as objectionable, but which can be avoided with ease. Except for a limited trade, the butter which creates a market for itself is that which possesses a rich, clean flavor, rather than one which is too mild. The comments usually made on flat flavored butter is that flavor is lacking.

Salt Limit Being Crowded

In many instances buttermakers are pushing the salt content of their butter beyond a safe limit. It was necessary to make some cuts for excessive salt. Obviously, a butter which contains undissolved salt is objectionable, and is not salable at highest quotations. However, some makers are successful in incorporating a large percentage of salt, at the same time avoiding a gritty condition. The thought that the salt content is satisfactory so long as grittiness is not present is erroneous, and conversation with several different butter merchants revealed the fact that too much salt is being put into some of the butter handled on the market.

In this same connection it can be said that too many creameries are sacrificing quality for overrun. In the desire to increase profits, it must not be assumed that the only way to do this is to expand, do more business and crowd the overrun. Perhaps more than one creamery could be found which is barely holding out through the fact that ambitions point to more butter rather than better butter. It is not beyond reason to say that some of our creameries would be better off financially if they absolutely turned down and refused to accept some of the cream which they now almost fight to obtain. In examining a small shipment of ten boxes of butter on the market recently, three were found which would pass as "Extras." Regardless of the cause for this, it was a case of a creamery paying several cents above "Extra" quotations for butterfat, yet receiving not better price than "Prime First" for butter made from the cream. With a difference of but one cent between the two grades of butter, such business methods will eventually prove disastrous. Right now, quality is at a premium.

The fifth entry will be scored in connection with the California Creamery Operators' Association convention, October 28, 29 and 30. Contest buttermakers will be given credit for the score they obtain at the convention scoring. Information regarding this will be sent out later. Buttermakers not receiving notices of the bi-monthly scorings, who are interested, are requested to write for entry blanks and shipping tags. The convention scoring will be the largest contest of the year. Every creamery is urged to take part.

HOW I CURED BALKY HORSES

Written for California Cultivator
By H. C. Coe, Manhattan.

When I was a young man I was peculiarly unfortunate in having to use balky horses. Of course the first thing (and the worst thing) is to beat them. Undoubtedly a balky horse is the most aggravating object in the world, but beating is worse than useless. They generally fall down, breaking the tongue or thills, doing all kinds of mischief. So I gave up beating and tried patience. Once when some distance from home one of the team concluded to stop in the middle of a long, sandy stretch of road. I tried everything I ever heard of without success. He would not pull and one horse could not pull the load alone. It was getting late, along toward dinner time, and of course I was hungry. I unhitched from the wagon, tied the balky horse to the hind wheel and jumping on the other horse went home. When I returned the next day "balky" could hardly wait until I was in the wagon and wanted to pull the whole load. Now, try this on your next case of balks. Unhitch from the wagon, but don't unharness. Fasten up the tugs so that they will not get under foot, then take a rope about ten feet long (one of the reins will do if you have no rope) and fasten through both rings of the bridle, then take the buggy whip and start him going around in a circle. Don't get mad. Whip only just enough to keep him going. From a slow trot increase to a fast one, then later to a lope according to the severity of the case. As soon as he shows a tired feeling, sweating freely, take him out just as though nothing had happened and hitch him up. Should he still persist, try it again, and I think your troubles will be over for the time, and a few lessons will make a reasonably true animal out of him. I never failed.

LOST: 18,000,000 TONS OF HUMUS

A few weeks ago, when one of the experts of the federal division of animal husbandry was making a field trip through certain parts of Kansas and other north central states west of the Mississippi, he found the sky darkened with the smoke of burning straw stacks. Investigation proved that not only were the farmers burning wheat straw, but that stacks of sorghum, kafir, and other feeds were being reduced to ashes.

"On some of the wheat fields I found old straw scattered," he said to the writer, "but such instances were few and far between. It didn't look quite so bad to see wheat straw burning, but the sight of thousands of tons of sorghum going up in smoke was enough to make a livestock man weep."

"I asked some of the farmers why they were burning this feed and they answered that they couldn't afford to feed it; that, owing to the peculiar condition of the meat market that had resulted in fat cattle selling for less than thin feeders, they didn't have the money to buy thin cattle for their farms."

It is not the intention of the writer to attempt an explanation of the condition of the livestock markets that may have had something to do with this wholesale destruction of good feed and rich humus. But it is his intention and opportunity to present some brand new government figures which show what this wholesale firing of straw and feed stacks means to the country as a whole.

For the first time the department of agriculture has collected comprehensive data on the utilization of straw in the farming sections of this country. The figures have just been tabulated and checked.

Statisticians in the federal bureau of crop estimates have summarized all the reports and find that of the annual production of straw in this country—about 120,000,000 tons—some 17,612,000 tons are burned. Placing an average value of \$3.71 a ton on this, we get a total loss of \$65,344,230.

Even this does not represent the

total loss to our agriculture by the burning of straw. The less humus there is in the soil the smaller the yields and the more money spent for fertilizers.—Country Gentleman.

PURPOSE OF THE DAIRY BARN

The purpose of the dairy barn is to house the stock so that they will be as comfortable as possible. It should be built with as much economy of space as compatible with the number of cows kept and in a manner which will admit of as much economy of labor as possible. The barn should provide sufficient space for the storage of hay, fodder and the grain necessary to carry the stock through the feeding season. The entire structure should be constructed of durable material and at a minimum cost. Barns have been called the farmers' factories where grain and roughage are converted into the more expensive product, milk and butter fat. Whether the profits are large or small may depend largely on the comfort and housing conditions rather than on the feed that the stock receives. Dairy stock of a fair grade will give good results in a well built barn, while high grade stock may give poor returns in a poorly constructed barn.

Types of Dairy Barns

The type of dairy barn that one should build depends on a number of different factors. The location and topography of the land may favor one type over the other. Severe climatic conditions would favor a warmly constructed barn, while the sections with a milder climate could do without that type of building. The grade of milk produced would influence the construction of the barn to some extent. The amount of money available for building would influence the type of construction more than any other factor.—R. E. Hundertmark, Washington State College.

To make good butter it is necessary to have clean milk and healthy cows. Milk from unhealthy cows is not a safe article of food, even though there is no visible dirt in it.



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Cough

I have a cow that has a sharp cough every ten or fifteen minutes. Have not been able to locate any swelling, foxtails or anything to cause it. She eats well and is apparently in good health every way. She is coming fresh again in two months and I wish to cure her before that time. Can you help me in this matter?—Subscriber, Templeton.

Try the following powders: Camphor one ounce, powdered belladonna leaves two ounces, powdered digitalis leaves two ounces and powdered licorice root two ounces. Mix and divide into 16 powders and give one in the feed every night. If this does not relieve her then have her tested for tuberculosis three or four weeks after being fresh.

Stumbling

I have a mare eight years old that has very recently commenced stumbling with one of her hind legs when driven on a trot in the buggy. During the week she works in the orchard. Have had her reshod and rested but find she still stumbles. Can you tell the reason?—Subscriber, Porterville.

Stumbling indicates a weakness of the muscles, probably caused by a strain. In this case, being in the hind leg, it must be due to some trouble in the muscles of the hip, the ones that

lift the limb while it is being carried forward. The muscles failing to lift the foot as high as usual allow it to come in contact with high places in the road. Bathe the hip with liniment and rest her for some time.

Mammitis

Have a cow that is a very hard milker. Undertook to insert a dilator that was about an inch long and a quarter of an inch in diameter. Think it was rather large. Inserted it about half the length and she kicked it out of my hand and lost it. That evening the teat was sore and somewhat swollen. Next morning milk was stringy and now there is a hard cord through the teat and up into the udder. No milk to speak of and that of a dark brown color and clotted. She has fallen off on the rest of her milk but milk from the other teats seems good. She is kept staked on alfalfa and fed alfalfa hay, etc. For a time was lame in the hind leg next to the affected quarter but walks all right again. Eats and drinks as usual. Thought she had been bitten by a snake but could find no marks. What can be done for her?—Subscriber, Valley Center.

Mammitis or inflammation of the udder may be caused by injuries, disease of the blood from a clogged system or by introducing microbes into the udder through the ends of the teats. The dilator you used was very large and if it was not sterilized just before using may have carried some microbes in with it or injured and stretched the muscle so the microbes could easily enter right after. It is quite evident that the work you did on the teat caused the trouble. The quarter will probably be lost but you may save it by bathing it with hot water, rubbing it and milking it out carefully three times a day. Also give a handful of epsom salts in the feed once a day for a week. More than that you had better not attempt to do.

Follow the Crowd to the Hanford Sale!

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25 A. R. O. cows with records as high as 29.90 lbs. butter in 7 days. Also a 24.45 lb. 3-yr.-old, a 22.50 lb. cow and others over 20 lbs.

30 daughters of A. R. O. cows, including 17 daughters of Colantha Sir Pontiac Aaggie out of cows with records of 30 lbs. (1), 29.90 lbs. (2), 24.45 as a 4-yr.-old (1), 24.45 as a 3-yr.-old (1), 22.50 lbs. (3) and others from A. R. O. cows—just as fine a lot individually as were ever led into a sales ring. Also daughters and granddaughters of Homestead Girl De Kol Sarcastic Lad, King of the Pontiacs, Pontiac Hengerveld Parthenia, Lorena Korndyke, King Segis Pontiac Emperor and other great sires.

Candidates for great records, don't overlook these. You can make a fortune buying and testing this kind, which have never been tested. There can be no limit put upon the value of their calves, bred as they are to many of the greatest sires in the West, including sons and brothers of world's champions.

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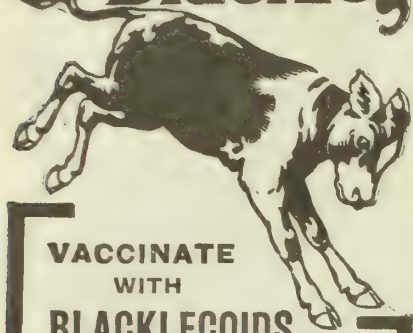
Well, your opportunity is at hand. About twenty good ones will be offered here, including a son of a 29.90 lb. cow, a 28 lb. cow and others from great record dams. **Remember, This is the Last Call!**

Col. B. A. Rhoades, Auctioneer, Los Angeles

Jas. W. McAlister, Jr., Sales Manager, Chino

Announcement—A daughter of Colantha Sir Pontiac Aaggie out of a 17 lb. dam just made 25 lbs. butter in 7 days. What will his daughters out of great record dams—such as offered in this sale—do when they commence to freshen? Is the answer hard to guess?

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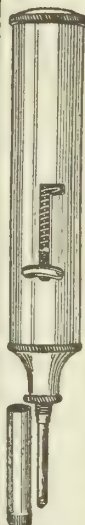
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STOCK ON EXHIBITION

Continued from Page 339

dustries are in attendance. There are officials and other representatives of the various breed associations, and the show will be well reported to the live stock and agricultural press of the country. W. R. Goodwin, editor of the Breeders' Gazette of Chicago, and one of the greatest writers on live stock subjects in the world, is here to report the show for that paper, and expresses himself as very much pleased with the show, its management and California conditions in general. He spoke particularly of the exceptionally high class lot of men in attendance at the California Draft Horse Breeders' Association meeting and banquet, and predicted a bright future for an industry in such good hands.

Meetings of the leading breed associations are being held, and at the California Draft Horse Breeders' Association meeting Henry Wheatley, the shire breeder at Napa, was made president, and Professor J. I. Thompson, of the University of California, secretary.

This association banqueted the visiting breeders and exhibitors, and it was the opinion of the majority that it

although the number entered is not large. The competition is between Pacific Coast breeders and some from studs from Wisconsin, Illinois and Kansas. Alex. Galbraith of Canada did the judging.

The Pacific Coast breeders represented are John Troup, Goleta, John Painter, Salem, Oregon; O. H. Brandt Shellville; C. W. Bowers, Davis, and Francis D. Buck, Ripon.

Californian Shires are making a particularly attractive showing. Splendid individuals are entered by Easton & Ward, Burlingame; Henry Wheatley, Napa; C. W. Bowers, Davis; Jack London, Glen Ellen, and the Bridgeford Company, San Francisco. The show is in charge of Chas. W. Burgess, secretary of the American Shire Horse Association, Wenona, Illinois, who is doing the judging. The competition from Eastern breeders is very keen.

All of the standard bred horses belong to California breeders and are being judged by W. A. Palmer, Ottawa, Illinois.

There is a big show of gaited saddle horses. The competition between Eastern and Western breeders is particularly keen, and the interest indi-



Sir Holland Gamp

A great show bull and a prize winner wherever shown. A number of cows will be in calf to him. Consigned by Alex. Whaley at Hanford.

would be well for the association to continue to hold public consignment sales, as was done this year at Davis. The small breeder and the beginner in the pure bred draft horse business will be encouraged and interest in the business stimulated in this way and the distribution of good horses over the state hastened.

Interest in the horse business is indicated by the fact that during the horse show there has been the largest attendance for "mid-week" days since the beginning of the show.

The harness and saddle classes and the polo games and other sports make a spectacular and interesting part of the show, as do the events participated in by the United States regular army officers and soldiers.

Numerically, the Percherons make up the largest part of the pure bred draft horse show. They are in charge of the Percheron Society of America and are judged by Professor C. F. Curtiss, dean of the Iowa state agricultural college. A particularly strong part of the show was made by California breeders. Among these are Anita M. Baldwin of Los Angeles, who had the most spectacular display in the whole horse show; Thos. D. McLaughlin Importing Co., Oakland; Dunham-McLaughlin Co., Oakland; John Secrest, Stockton; Wm. Bond, Newark; M. Bassett, Hanford; H. G. Learned, Stockton; C. W. Bowers, Davis; A. S. Ashe, Halfmoon Bay; E. B. White, Oakland. Many of the prize ribbons went to these breeders.

There are fewer Belgians shown, but among these are many outstanding individuals. The superintendent of this class is J. D. Connor, Jr., secretary of the American Association of Importers and Breeders of Belgian Draft Horses. The judging is being done by Samuel Bell, Wooster, Ohio. Among the Pacific Coast breeders represented in the winnings are C. W. Bowers, Davis; G. J. Luhrsens, Bethany; A. C. Ruby, Gresham, Oregon, and James Edson, Carlton, Oregon.

A select lot of Clydesdales are shown,

cates that horses of this type are in great demand by people who can afford to own them. Some of the best gaited horses ever shown in America or the world were exhibited, the very acme of saddle horses excellence. California winners are Adelaide S. Gillis, Los Angeles; R. L. English, Chino; Mrs. Charlotte B. Anderson, Oakland; Bridgeford Company, San Francisco; Martha Freeman, Los Angeles; F. J. Bosk, Sawtelle; Mrs. E. P. Riggle, El Centro; John E. Marble, Los Angeles; Mrs. W. E. Buck, San Francisco; Thornberry & Shropshire, Los Angeles; W. J. Smyth, Oakland; Etta H. Scofield, Oakland; L. C. Deming, Anaheim, and J. S. Bryan, Hollister.

Morgan horses were shown by Morgan Horse Farm, Plainfield, Iowa, and Jos. C. Breenk, Springfield, Illinois. They are being judged by G. Howard Davidson, Millbrook, New York.

A select lot of hackneys are being exhibited by the Woodland Hackney Stud, San Francisco.

One of the most interesting exhibits in the show is that of Arabian horses, shown by Anita M. Baldwin, Los Angeles, and S. C. Thompson, San Francisco.

Shetland ponies are shown by several large eastern breeders and by Ina M. Richter, Santa Barbara, and John Troup, Goleta.

The jack and jennet show is in charge of Wm. F. Morton, secretary of the Standard Jack and Jennet Registry of America, Kansas City, Missouri, and they are being judged by F. B. Graham, Kansas City, Missouri. Splendid individuals are being shown by several breeders from the East and by M. A. Merrill, Willows; Anita M. Baldwin, Los Angeles; Blevins Brothers, Williams, and Eaton & Hughes, Santa Rosa.

The management of the exposition has reason to be mighty proud of the horse show, and California of the showing made by local breeders.

Imperial has fixed a price of 12 cents for fancy cotton.

BREEDING MILCH GOATS

As this is the season of the year when most milch goats come regularly "in heat," it may be in order to offer a few suggestions relative to the best methods of handling the buck and does at this time. During the summer months the bucks show little if any interest in the does and it is my practice to have our bucks in fine condition then, as when the rutting period begins they show great uneasiness and rapidly lose flesh. I like to have the bucks in good flesh and heavy before fall, especially the young ones, for young bucks frequently become so overwrought during the breeding season they will not eat heartily and consequently their growth is retarded. Buck kids dropped early in the winter are usually the finest, as they have more time to develop before the breeding period begins than those kidded at a later date. It is unwise to use a buck for service under less than ten months of age, and it is my custom to have a young buck serve some three does after he is ten months old, so that his value as a buck may be determined. He is permitted to breed these few does with intervals of a week at least between breedings, and I consider it unwise to use a young buck often until he is about 18 months of age. At this age a well fed buck can readily serve 20 or more does. Owing to the strong odor of the bucks, I find it worth while to use a blanket on does that are to be bred, as the blanket keeps the odor from permeating the doe's coat. If care is used not to allow the buck to rub himself against the doe, scarcely any of his objectionable odor is noticed on the doe after the breeding.

Sometimes lice prove troublesome on goats, and it is a very good plan at this time of the year before does are bred to dip with a mixture of kerosene and grease to eradicate these pests. Use one part grease, such as suetene or lard, to three parts kerosene. Heat the grease, then stir in the kerosene. Between one pint and one quart of this mixture is enough for each goat. Use an absorbent cloth, such as flannel, to rub the dip well into the coat, applying especially generously to the thighs, where lice are usually thickest. This dip is harmless and effective, but do not use kerosene without the grease, as it will injure the skin, whereas the addition of the grease acts as a modifier and prevents burning or blistering the skin. For a time after application of this dip a goat looks mussy, but after her fall coat comes in it will be clean and glossy and it is benefited by this application if it is properly applied.

(Continued on Page 354)

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American Guernsey Club

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Young Stock For Sale
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Hanford, Cal.

Poultry for Profit

THE DOMESTIC GOOSE

Written for California Cultivator
By Jean A. Koethen

GEESE have been kept in domestication from earliest times, so far back that it is impossible to say when they were wild. Indeed it is asserted that the wild geese now known are of quite a different species. Most authorities however agree that the common farm goose of America and England is descended from the indigenous wild goose of the British Isles, known as the gray lag goose.

Amazing stories are told of the long life of geese. It was customary in old times in some parts of the country for the farmer's daughter on her wedding day to receive a goose from the old homestead. This was taken to the new home and often outlived its mistress. There is on record a goose owned by a Massachusetts man, that lived 101 years and then was killed by a kick from a horse that had ventured too near the nest on which she was sitting. She flew off the nest in defense of her eggs, caught the horse by the tail and received a kick which ended her life. Good geese may be kept with profit till they are 25 years old, but ganders are less useful after seven or eight years and are usually replaced after that age.

Geese incline to mate in pairs, but a young gander will often take care of three or four females. It is said that if a pair are left alone in a field together till they have had time to get acquainted and to become perfectly satisfied with each other they will never mate with others. Fall or early winter is the best time for mating geese because it gives geese and gander time to become accustomed to one another.

Breeders should be hardy and not overfat. Select a gander not less than two years old, with large, bright eyes, massive neck, and deep full breast. The goose should be a clean bird—for sickly birds are always dirty—and not too closely related to the gander. Geese are valuable breeders up to their twelfth year but are at their best from the second to the fifth or sixth year. It is better to breed neither goose nor gander under two years. If you do there will be many infertile eggs, because the birds are not mature until this age.

The hatching season begins early in spring whenever the goose begins to lay. Many breeders set the first clutch of eggs under hens, break up the broody goose by destroying or removing her nest, and let her lay another clutch before she sits. Some let hens do all the hatching. A large hen can cover five or six goose eggs.

When hens do the hatching the eggs should be sprinkled with tepid water daily while the hen is off feeding. This sprinkling takes the place of the wetting they would receive if they were under a goose and she came back from her daily meal and swim with wet feet. If the eggs are under a goose and she has no opportunity to swim during incubation I suppose the eggs need sprinkling as much as they would under a hen. The shells of goose eggs are so thick and tough that if they are not softened by frequent moistening the little gosling has great difficulty in breaking through. When this occurs the caretaker must help the gosling out by breaking the shell and making a hole large enough to enable the gosling to clear itself. Any interference, however, must be with great care.

When pipping time comes, which is about the thirtieth day, the hen must be watched, for she may not like the looks of these queer gray creatures. I had the disappointing experience last spring of caring for a hen through a 30-day incubation, only to find three of the four eggs she sat upon infertile and to see the one forlorn gosling that did hatch killed by its mother's

beak. These are the lessons we remember.

Nests for geese on range should be in out-of-the-way places where they can be hidden as much as possible. The sitting goose will sit only in the nest she has laid in, and this should be kept in mind when the nests are prepared. When geese are kept in confinement it is a good plan to have a long, covered pen, about four feet high, divided into as many compartments as there are laying geese. Each compartment should be about three feet square with a board cover on hinges so that it may be raised when necessary. If the pen is under a shed the covers of the compartments may be omitted. A few handfuls of straw will provide all the nesting material necessary. If the geese are watched at first, and each compelled to lay in a separate pen from the start, they will usually keep their nests through the season.

The eggs should be removed from the nest as soon as they are laid and several china eggs kept in the nest so that the goose may not have her suspicions aroused. Lay the eggs on a layer of cotton in a pan or box, cover them with a thin cloth and set them in a cool place. Turn them daily. A goose lays every other day. If she is a prolific layer she may lay 30 or 40 eggs in one clutch. In such a case it is absolutely necessary to set the first eggs laid under hens, for long keeping makes weak goslings. Goose eggs hatch well in incubators and turkey hens are often used for hatching.

When the goose becomes broody after laying her second clutch of eggs the nest should be carefully prepared before the eggs are given to her. Remove the straw and feathers from her pen, hollow out the earth a little and cover with a layer of fine, dry dirt and another of straw or chaff, with some of her feathers on top. The nest must be so deep that the eggs will not roll out when she leaves it.

In parts of England laying geese are provided with huts or cages of willow twigs. These are turned over and an opening left large enough to admit the goose easily, with a hollow space at least two feet in diameter inside. Sometimes these nesting huts are placed in a shed.

A small goose will cover 12 eggs and a large one 16 or 18. The sitting goose should be fed regularly, and sand, gravel and fresh water placed near her. She should be left undisturbed except for a daily visit to see that she is on her own nest and that none of the eggs have rolled from under her. After the eggs begin to pip leave the geese entirely to themselves till the hatch is over, when the goslings that have failed to free themselves from the shell may be helped out.

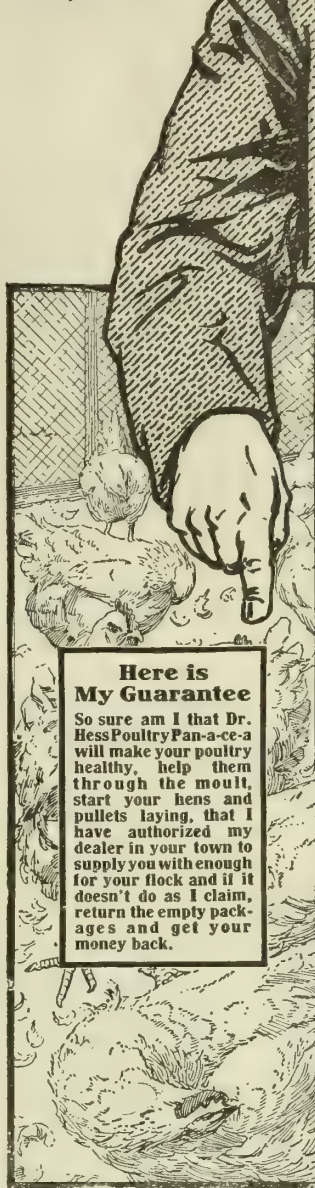
The goslings should be left in the nest for 24 hours after hatching. Set a shallow dish of water near with a little wheat bran and bread crumbs or bran and hard-boiled eggs on a board. The day after hatching if the weather is pleasant the goose will slowly coax her brood from the nest and into the open. The first ten or twelve days goose and goslings may be kept in a coop or portable pen on lawn or other good green range, still feeding the bran and egg. After this they may have their freedom.

The ideal home for geese, young and old, is a pasture. Perhaps it is because of our lack of pasture in California that more geese are not raised. It is said that the cropping of the grass and especially of the weeds by geese is most beneficial to pasture land. There is an old saying that "nothing can eat after a goose" because it crops so close. Theodore F. Jager tells in Harrison Weir's "Poultry Book" of a relative of his, a dairyman, who found that when his cows were pastured in a certain field the butter was so bitter as to be unsalable. "Turn 20 or 30 geese into the

(Continued on Page 354)

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If you are not feeding it now a change at this time will do your hens good.

Write us for particulars and free book, "Chickens from Shell to Market."

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Wanted—To hear from breeder of White Wyandottes who can supply fertile eggs in January. Bellow Bros., Lakeside, Cal.

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THE DOMESTIC GOOSE

Continued from Page 353

field and let them eat up the bitter weeds that are spoiling the butter," ordered Mr. Jager. The relative demurred, but finally took the advice, and thereafter the butter was sweet and good. "Where a number of geese have foraged," says Mr. Jager, "the grass comes juicy, close and better."

Geese on good pasture need little grain. Wheat and hulled oats after the bran and bread crumbs of the first ten days are left behind; wheat and oats in the morning, with cracked or whole corn for a night ration after the birds are old enough to swallow such large grains, make a sufficient ration. Some breeders feed the goslings after the first ten days bran, ground oats or middlings mixed with hot water, and do not give whole grain till the birds are ten weeks old. Young goslings do not care for sloppy food. Whatever they have must be dry or crumbly. A cake of corn meal, bran and middlings, heated thoroughly in the oven, but not baked crisp is a very good first feed.

Water should be before the goslings in a fountain which will not permit them to wet their down. After they have their real feathers they may go swimming, but not till then.

Since geese and ganders are feathered exactly alike it is often difficult to distinguish them. Some breeders determine the sexes by the difference in the voice, that of the gander being heavy and coarse while that of the goose is higher and more shrill. A gander is a little more heavily built, with longer neck and larger head, but this difference is not always noticeable in young birds. It is said that in Cambridgeshire a curious plan is followed. All the geese are shut in one small pen or building and a small dog is then put in. It is said that the geese will all lift up their heads and go to the back of the place, while the ganders will stretch out their necks and hiss.

The goose is intelligent, interesting and easily and cheaply raised, but it has one fault which brings it to pass that very few reach a ripe old age. Its domineering temper makes it sooner or later an insufferable member of the family, for it is satisfied with nothing less than absolute mastery. When this time comes there is but one remedy, and Mr. Gander or Mrs. Goose is guest of honor at the Christmas dinner table.

BREEDING MILCH GOATS

Continued from Page 352

On no account dip a doe that is known to be pregnant until after she kids.

Among some goat owners there is an erroneous idea that the buck is responsible for the number of kids a doe may drop. I know of an instance where a man wished his doe bred to a certain buck because the year previous when served by this same buck she had triplet kids. The number of kids at a birth is determined solely by the number of ova produced by the doe. When a doe is "in heat" from one to three or sometimes, rarely, even four ripe ova are discharged by the ovaries. These ova if fertilized by the semen of the male, develop into kids. It therefore may be plainly understood that the buck in no manner whatever influences the number of kids at a birth.—Winthrop Howland in Angora Journal.

On the front cover of our issue of September 22 we published photographs of two calves raised by McAlister & Son of Chino. The top photograph represented Abby Segis Pontiac at 12 months, weighing 908 pounds, and the lower one represented Wiegertze Girl Pontiac, at 12 months, weighing 880 pounds.

Inasmuch as these weights are very exceptional we desire to call attention to the fact that the calves were raised on a diet consisting exclusively of alfalfa and dried beet pulp. McAlister & Son state that they feed their calves a ration composed of about 75 per cent beet pulp and 25 per cent barley until four months old, after which they feed dried beet pulp exclusively. The value of dried beet pulp over other concentrated feeds is shown in the fact that at the Kansas station the average weight of their calves is only 669 pounds at 12 months, and Henry, in his "Feeds and Feeding," states that "whoever attains these figures in rearing calves should be well satisfied."

At the Michigan station under a heavy ration of grain the average weight of 57 calves at 12 months was 648 pounds. We understand that McAlister & Son have attained a regular average at 12 months of 895 pounds, and they are certainly to be congratulated on this record. This seems to indicate not only the care with which McAlister & Son raise their calves, but also that alfalfa and dried beet pulp make a splendid ration.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Roup in Turkeys

Half grown turkeys have swelling under eyes. Have opened and found only pus. Have fine appetites.—Subscriber, Oroville.

These turkeys undoubtedly have roup, though just why they should with such splendid range it is hard to see. Perhaps they have been sleeping indoors. Perhaps there is roup ancestry back of them somewhere. The potassium permanganate treatment so often recommended for chickens will relieve the stopped-up condition of the head and nostrils. Get five cents' worth of potassium permanganate crystals from your druggist and put just enough in a quart of lukewarm water to give the water a good pink color. Dip the turkey's head in this solution and hold it under while you count five. Give this treatment night and morning to each sick turkey. You might also try a few doses of quinine. Give a one-grain capsule at night three nights in succession, then discontinue for three or four days. If the bird does not improve, repeat the treatment three days more. See that the sick birds have plenty of fresh air at night, but it may be necessary to shelter them a little until they recover.—J. A. K.

Dipping Potatoes

In your issue of September 23, page 299, you refer to dipping of potato seed. Is this before or after cutting? Also, how long after the dipping should they be planted?—Subscriber, Tres Pinos.

The dipping should be before cutting, and while we do not think there is any great difference, planting should be at the earliest convenient time after the dipping. We doubt not a few days would make but little difference.

Persimmon Not Bearing

I have a Japanese persimmon eight years old which a few years ago bore fruit, but the last three years has dropped the fruit soon after it forms. I have tried more water and find no difference. The tree stands in the chicken yard and has an occasional spading about the roots. What is wrong?—K. C. M., Los Angeles.

Try some wood ashes around the roots, and if this fails there may be some trouble with the blossom clusters. It may be that a scab or some small insect like a thrips causes the fruit to drop. I have seen scab so thick on loquat fruit that it was almost worthless. Many of our cluster fruits drop through the devitalizing effects of small insects working on them when the fruit is in blossom stage and even after the fruit starts to grow. These are best destroyed or kept away by standard sprays that may be bought on the market and should contain some solution of nicotine.

Worms in Chickens

I am losing a lot of growing chickens with worms. They develop the worms seemingly when they are between two and four months old. I have tried various remedies but without any degree of success. Can you advise a remedy that will be effectual?—Subscriber, Santa Barbara.

Better move all young stock to fresh ground. The fact that the chickens

are so severely affected seems to indicate that the soil they are on is badly infested with these parasites. Then give oil of turpentine, one tablespoon of the oil beaten with a new laid egg and mixed thoroughly by shaking. Give a teaspoon of the mixture night and morning for a few days. Powdered areca nut is also considered a specific for intestinal worms. Divide one-fourth of an ounce of the powder into four parts and give one part each morning, fasting, with a dessertspoon of olive oil two hours after each powder. Pumpkin seed chopped and fed freely is also used.—J. A. K.

Breeding Gobblers

Would a gobbler hatched last January or February do for breeding purposes for the coming season?—Subscriber, Salinas.

You can use a gobbler younger than this if the hens are two years old or older. The mating of a tom of last season's hatch, April or May, with mature hens is considered one of the best. Never mate a young tom to pullets.—J. A. K.

Geese

Would some one please tell me through the Cultivator something more about geese. How can one keep them all in one house when they sit? If so kept do they usually find each one her own nest when returning from feed? How many females can one keep with one male? How can one tell a gander when about seven months old? I have 12 and they all look alike to me, only some have a thin high-pitched voice and some low and coarse, like a duck.—Subscriber, Salinas.

These questions are answered in Mrs. Koethen's article in the poultry department this week.

Chicken Pox

Mrs. Koethen seems to be an exhaustless fountain of information and advice for the poultryman, so I would like to ask her what, in her opinion, is the best advance action to be taken to ward off chicken pox among hens in large flocks. The dry winters I never see it, but the last two wet seasons it has seemed impossible to keep it off. A large majority of the hens seem immune. Is it possible to tell in advance what hens are most likely to have it? Is the cresol disinfectant made as directed in our state agricultural college circular 99 considered a good preventive disinfectant against chicken pox? I cannot see that it has any effect. In fact to use any kind of liquid disinfectant only seems to increase the dampness without checking the disease.—Subscriber, Inglewood.

I never used cresol disinfectant, because I have found crude carbolic acid and kerosene, one part carbolic to three or four of kerosene, sufficient for my needs and more easily prepared, but the cresol is recommended by all the authorities and ought to do the work if used in sufficient strength. Circular 99 recommends a three per cent solution, but the Maine station suggests that where infection with the germs of disease is suspected the cresol may be used in double strength and applied with a scrub brush in addition to the spray. If the disinfectant does not dry out quickly enough in your houses why not try Carbolineum or the kerosene and carbolic mixture, made extra strong? I doubt if any germ can survive a painting with crude carbolic acid. Perhaps you have sprayed instead of painting. I have never found spraying very satis-

factory for I never feel sure that every spot has been saturated. You realize of course that chicken pox is an infectious disease and must come from a germ somewhere. The germ may live for years about the buildings or feed troughs or water fountains or it may be carried by lice, ticks, mosquitos or by new fowls introduced into the flock. I think it might be carried in an epidemic year on the clothing of a person coming from an infected plant. It is for you to find out where the infection comes from and protect your flock against it. Perhaps your houses are dark. Germs thrive best in darkness. Sunshine is the best of all germicides. The only drug I have ever seen recommended as a preventive for chicken pox is calcium sulphide. Dr. N. W. Sanborn says that this drug, given to chickens that have been exposed to chicken pox, will keep them from taking it, and given to fowls already affected with the disease mitigates the violence of the attack. The drug must be fresh and strong to be effective and is given in doses of one grain for each five pounds of poultry. Mix the drug in a small amount of moist mash and feed once a day for two weeks. When used merely as a preventive it need not be used so long. It would not be wise to use it unless the disease made its appearance, but if one single case appeared I should isolate the sick bird and give the dose for several days to the whole flock.—J. A. K.

Borers

I set out some young apple trees last spring which were all making a fine growth until about a month ago, when occasionally one would die back and a new shoot would come out. Upon making investigation I found something had bored in under the bark just at top of the ground, boring in the wood all the way around the tree. Please advise what is causing the trouble and give a remedy for it.—Subscriber, Saugus.

In all probability this is simply a severe case of flathead borer. However the subscriber should make an investigation, following the burrows of the pest until the "worm" is discovered. Then if he will send us specimen we can quickly determine as to proper treatment, though the only satisfactory treatment is to find the burrowers and kill them by using either a wire or sharp knife. Of course no exterior spray or treatment is effective. After the pests are all removed from the trunk then painting with asphaltum six or eight inches about the base of the tree will usually prevent entrance of the pest.

Figs and Dried Fruits Wanted

A subscriber from Naples (California) writes: "Where can I obtain sun dried, unsulphured, black Mission figs? I would like to get in touch with some fruit grower who makes a specialty of pure sun dried fruits."

Surely such a request should meet with many responses from this state.

Limberneck

My chickens seem to have a disease of the neck like St. Vitus dance. Have lost one hen and a rooster is now affected. Can you give me any information in regard to this matter?—Subscriber, Orosi.

Your chickens have probably been eating putrefied meat, moldy grain or something else that has upset the digestion. Give each affected bird 50 to 60 grains of Epsom salts or three to four teaspoons of castor oil, and try to find the cause of the trouble. I lost a number of birds one year with this disease, which is called limberneck, and finally concluded that it came from bran and chick feed which had become moldy on the ground in one of my Philo coops. Sometimes a dead chicken left unburied on the range will start an epidemic of this sort.—J. A. K.

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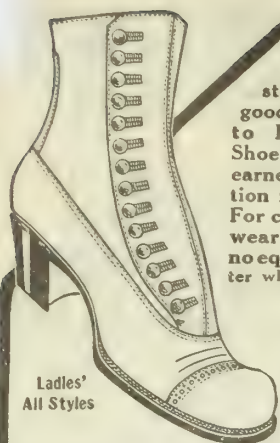
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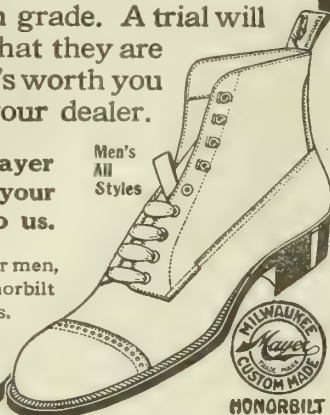
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The Household Department



A SONG OF TRIUMPH

Work!

Thank God for the might of it,
The ardor, the urge, the delight of it—
Work that springs from the heart's desire,

Setting the brain and the soul on fire—

Oh, what is so good as the heat of it.
And what is so glad as the beat of it,
And what is so kind as the stern command.

Challenging brain and heart and hand? ;

Work!

Thank God for the pride of it,
For the beautiful, conquering tide of it,
Sweeping the life in its furious flood.
Thrilling the arteries, cleansing the blood,

Mastering stupor and dull despair.
Moving the dreamer to do and dare.
Oh, what is so strong as the summons deep,

Rousing the torpid soul from sleep?

Work!

Thank God for the pace of it,
For the terrible, keen, swift race of it,
Fiery steeds in full control,
Nostrils aquiver to greet the goal,
Work, the Power that drives behind,
Guiding the purposes, taming the mind,

Holding the runaway wishes back,
Reining the will to one steady track,
Speeding the energies faster, faster,
Triumphing over disaster.

Oh, what is so good as the pain of it,
And what is so great as the gain of it?
And what is so kind as the cruel goad,
Forcing us on through the rugged road?

Work!

Thank God for the swing of it,
For the clamoring, hammering ring of it,

Passion of labor daily hurled
On the mighty anvils of the world.
Oh, what is so fierce as the flame and doubt,

Calling the plan of the Maker out,
Work, the Titan; Work, the friend,
Shaking the earth to a glorious end,
Draining the swamps and blasting the hills,

Doing whatever the Spirit wills—
Rending a continent apart,
To answer the dream of the Master heart.

Thank God for a world where none may shirk—

Thank God for the splendor of work!
—By Angela Morgan, in New York Evening Mail.

A PROFITABLE FAMILY

Written for California Cultivator
By Maude Barnes



I was not because I had been trained or had any previous experiences in hog raising that I put forth my efforts along that line, but because several hog mothers belonging to a neighbor refused to own their offspring. Pity for the little pigs, mingled with a desire to see what kind of a mother I could be to them, led me to adopt 16 for a family.

The Imperial Valley, in the Colorado desert, had been calling for settlers to come and reclaim its waste acres, and my husband and I answered the summons and made one more home on the banks of America's Nile.

I could see no reason why I could not with good results apply the same methods I had used in my home and in business life and find them successful in my new venture, so I went about my family raising in a methodical way.

First of all I noticed that the wee pigs were just as clean and pink skinned as any new born animal and I determined to keep them so. I had a small movable pen for them, and in one end of it I made a snug little room where they could sleep warm, for the nights were cool and I knew my pigs must not get chilled.

I had only one pig that did not learn to drink readily. He positively refused to take any milk unless I fed it to him with a spoon, and this I did for two long weeks. At first I fed my pigs, one by one, out of a dish, for even little pigs are piggish and I wanted them all to get the same amount of nourishment. They had their milk often, but only a small amount each time. Little pigs are very easily overfed. I found this out to my sorrow when one little fellow got more than his share. He was taken sick with bowel trouble and I could do nothing to save him. Chloroform, which I procured from our nearest town, came too late to benefit him. As the pigs grew older I used a little trough to feed them in and they were always watching for me to come to the pen. They would stand up and beg and squeal, as loudly as small pigs



could when meal time arrived. I fed them also dry hay and a little green alfalfa.

It took care and patience, but day by day I could see my pigs grow. I had discouragements, of course, such as when I lost the one by overfeeding and another got out of his warm bed at night and in the morning I found him chilled and limp. I brought him into the house and wrapped him in warm cloths and gave him a warm drink. He rallied and was able to be with the pig family again, but the chill he had received was too much for him, so I was another pig short.

Pig life was a new study to me. I was quite surprised at the intelligence they displayed. They were so clean and so delighted to have their adopted mother near, that I could not help making pets of them. My spoon-fed pig was sadly humored and followed me every where on the ranch like a dog. Every night it would go with me when I went to gather the eggs, even to the tops of the hay stacks. I would often take them all along for an evening stroll, for exercise was good for them.

I was desirous of seeing the financial side of my venture hold up and it certainly did. The milk, with the exception of the first few weeks, that I fed the pigs was separated milk and therefore worth but little. The hay was a small item, and the fresh alfalfa, the main feed, I cut with a hand sickle along the sides of the water ditches where it would have gone to waste. Not until the pigs were shoats, or nearing the size where the name of hog would be applied, were they fed grain, and then how they did grow! I was fortunate indeed to have several fine brood sows among my 14 hogs.

I am not going to state just what my family netted me in cash, for it would sound like a proverbial California story, but I felt well repaid for my trouble when I received a check for my ranch "fancy work."

CARE OF MEN'S CLOTHING

Written for California Cultivator
By A. M. H.

The woman who is truly economical seeks not only to make a garment last longer, but to preserve its creditable appearance as well, and often a little work will make it look like new. It is a good plan to keep a package of absorbent cotton in a convenient place in the dining room, as a bit of cotton instantly applied will remove oil, milk or cream before they have time to leave a stain on the fabric. When silk neckties become slightly soiled they can be cleaned by brushing with a soft cloth or brush dipped in gasoline, and neckties can be quickly and easily made from pieces of silk or satin by using an old tie for a pattern and sewing on the old lining just as the original was put on.

When a vest has become too small it can be made plenty large enough by setting a piece in the back. This piece must be very narrow at the top and as wide as necessary at the bottom. When pants have become baggy at the knees, clean them thoroughly, then wash out all the soiled places. Turn the pants wrong side out and lay them on the ironing table with the wrong side up. Lay a wet cloth over all the knee portions and press until the cloth is dry, then turn right side out, fold in the center and press from top to bottom over the damp cloth.

When coat, pants or vest have become much soiled, the better way is to wash the garment in strong, hot suds, as much cleaning of grease spots will leave visible marks, and washing gets rid of all dust and leaves the cloth fresh and clean. There is nothing better for washing cloth of any color than hot suds made with borax soap chips, but it is best to dissolve the chips in hot water then stir enough of this soap solution in the hot water to make a strong lather. If a garment is very soiled wash through a second suds made with the soap chips then rinse through several waters, all hot, and hang them out without wringing. Keep them pulled into perfect shape while drying and they will dry without wrinkles and be easy to iron smooth.

Sweaters of any color come out soft and clean by washing them through warm suds made with the borax soap chips. This suds is especially good for washing socks and both the white and colored shirts. White garments are improved by soaking in the suds, but the colored pieces should be washed and rinsed as quickly as possible, and sweaters should be pulled into shape and pinned to a sheet, and when securely pinned, hang the sheet over the clothesline and the garment will not stretch out of shape.

FASHIONS IN FEZES

The stream of people crossing the Galata bridge, over the Golden Horn, runs red, for every Ottoman, except the Arab, must wear the tarboosh. "The man with a hat" means the foreigner. The way to see Constantinople without attracting attention to yourself is to slip on a tarboosh; but the wise foreigner has been slow thus to surrender the one visible token of his special extra-territorial rights, for when trouble is afoot the word goes out to spare "the man with a hat," because of the fear of international complications. During the reactionary revolution that followed on the heels of the constitution there was a ludicrous scramble on the part of the Greeks and other Christians to get beneath hats—and the sudden cloy of silk hats and derbies was wonderful to behold.

Fashions in fezes pass in review across the bridge. The Albanian has a white headdress—a cross between a fez and a skullcap. The Persian wears a huge black felt dome that is matched in size only by the big brown bulb that crowns the head of the dervish. The hadji, whose merit in having made the haj, or pilgrimage, to Mecca is proclaimed by his huge turban, is a frequent figure on the bridge, for every Moslem man who has the

means and the physical strength is expected to visit the birthplace of the Prophet at least once in his life. The elaborately wound headdress of the hadji is of white cloth, but a sayid's, or descendant of Mohammed, is of green. Sometimes the mosque officials, or imams, even when they are not of the Prophet's blood, wear the green turban.

Only the men wear any sort of headgear. The Oriental woman goes hatless. A cloth or veil is as much covering as she wears on her head. As I stood there on the bridge I saw a group of Turkish women stare through their thick veils at the hat of a foreign woman, as she hastened by. Since Young Turkey has come into power western fashions are much in favor in Constantinople.—William T. Ellis, in The Youth's Companion.

HOUSEHOLD QUERIES

Chayote Recipes

Please publish recipes for preparing the chayote for the table most palatable.—Subscriber, San Ysidro.

A grower and user of chayotes tells us that they are prepared for the table in identically the same manner as are summer squash, eggplant, and this class of vegetables. When young and tender it is unnecessary to peel the chayote, but when the skin becomes thick and tough it should be removed. This vegetable may be sliced, crumbed and fried, escalloped, stuffed and baked, creamed, served au gratin, etc. We give some tried recipes which will apply equally to each of the three vegetables mentioned:

Italian Methods of Serving:

Cut in slices, broil, and serve with seasoned, melted butter.

Cut in halves lengthwise and broil until soft, scoop out the inside and mash with a little finely minced salt pork, fried brown, minced onions, mushrooms, salt, pepper and bread crumbs. Fill the shells with the mixture, sprinkle with crumbs, baste with oil, sprinkle grated Parmesan cheese over the top and bake brown.

A simple and most delicious manner of cooking them is to cut the vegetable in two, score both sides, season with salt, pepper and a tablespoon of butter to each half and bake until soft, basting with the gravy which runs from them. Send to the table in the dish in which baked.

Fried.—Peel and slice the eggplant about one-eighth of an inch thick, sprinkle with salt and allow it to drain for an hour or more. Dip in beaten egg and flour, or in bread crumbs, and fry in hot butter or lard. Eat while hot.

FATHER HAD A GUN

"If you kiss me again," declared Miss Lovely, firmly, "I shall tell father."

"That's an old tale," replied the bold, bad young man. "Anyway, it's worth it," and he kissed her.

Miss Lovely sprang to her feet. "I shall tell father," she said, and left the room.

"Father," she said softly to her parent when she got outside, "Mr. Bolder wants to see your new gun."

"All right, I'll take it in to him," said her father, and two minutes later he appeared in the doorway with his gun in his hand.

There was a crash of breaking glass as Mr. Bolder dived through the window and departed in all haste for the railway station.—Ladies' Home Journal.

WILLIE'S CONFESSION

Willie had been very naughty, so much so, in fact, that after having reproved him several times his mother was at last forced to severely punish him.

When his father arrived home in the evening he at once perceived that Willie's eyes were suspiciously red.

"What's the matter, sonny?" he cried.

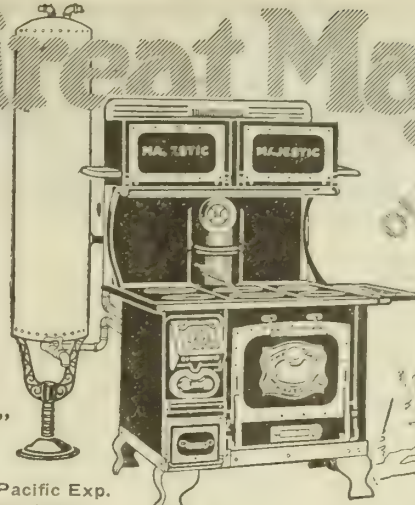
"Oh, nothing," responded Willie, uneasily.

"Come, don't be frightened," said the father in coaxing tones. "Tell me all about it; I want to know."

Willie remained silent for some time, then he suddenly burst out:

"Well, if you must know, I've had a thundering row with your wife."

Great Majestic



Award
"GOLD MEDAL"
Highest Award
Panama Pacific Exp.
San Francisco

"Old Faithful"—in the kitchen.

A Majestic Range in your kitchen is not merely something to cook with—it's a faithful, silent partner that lightens the work and lowers the cost of cooking.

Faithful in performance—it bakes right always; so built that heat is uniformly circulated to all parts of oven; and a heavy asbestos lining reflects the heat onto all surfaces of baking—top, sides, and bottom. Its big, copper tank, with pocket inset against lining of firebox is, like Old Faithful Geyser, continually bubbling with hot water.

Faithful in fuel economy—its scientific construction puts fuel to the fullest use; distributes the heat to all cooking surfaces and

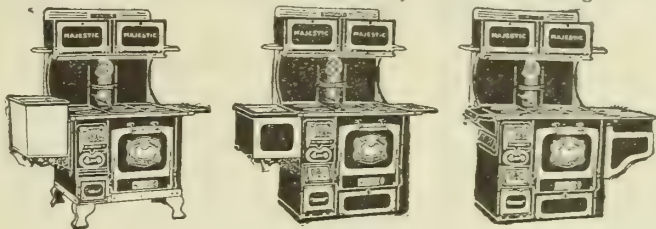
holds it inside—heat can't escape and be wasted, for cold-riveting (no bolts or clamps) makes the Majestic practically and permanently airtight.

The Majestic is made of non-breakable, malleable iron and charcoal iron which resists rust three times as long as steel.

You'll not hesitate to pay the little higher Majestic price, when you know its economy in use, and the way it outwears three ordinary ranges.

There is a Majestic dealer in nearly every county of 42 States—if you don't know one, write us.

One quality, many styles and sizes, with or without legs.

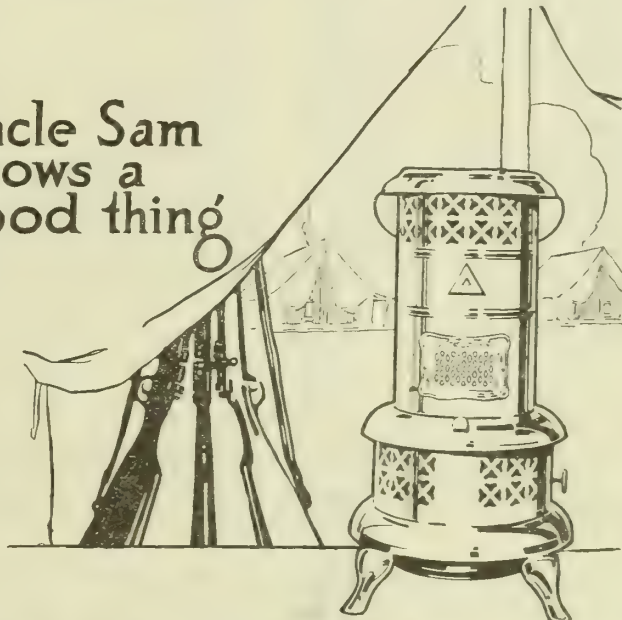


Write for Book.

Tells what to look for and what to avoid when buying a range. You can't judge a range by looks. You should know how they are made and why. Write for free copy

MAJESTIC Manufacturing Co., Dept. 203, St. Louis, Mo.

Uncle Sam knows a good thing



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Tents in the Model Camp, U. S. Marine Corps, P. P. I. E., San Francisco, 1915, are equipped with Perfection Oil Heaters. Smokeless and odorless. Dealers everywhere.

For best results use Pearl Oil

Standard Oil Company

(California)
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Dutch Bulbs

Our Holland Bulbs have arrived in good condition and are ready for your inspection. Ask us to mail you our Bulb Catalog containing Cultural Directions—Free.

Morris & Snow Seed Co., 437 S. Main Street, Los Angeles, California



San Francisco-Los Angeles Produce Markets



Los Angeles Market

LOS ANGELES, Oct. 6, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras 26
Firsts 22

CHEESE

Prices to trade, 1 to 2 cents higher:

Arizona Daisies	14 1/2
Arizona Longhorn	17 @ 17 1/2
California Fresh	15
Cheddar	20 @ 21
Domestic Swiss	19 @ 20
Eastern Daisy	18 1/2
Imported Swiss	40
Longhorn	17 @ 17 1/2
Oregon Triplets	14 1/2 @ 16
Tillamook	15 1/2 @ 16

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts	38
Candled	40 @ 42
Northern Fresh Extras, f. o. b. S. F.	42

Prices to producers:

Hens, lb.	13 @ 17
Roosters, old	9
Roosters, lb.	22
Fryers	18
Roasters, lb.	18
Turkeys	16 @ 18
Ducks	14
Geese	11
Squabs, doz.	1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	7.00
Prime Steers	7 1/4 @ 7 1/2
Heifers	6 1/4 @ 6 1/2
Calves, lb.	9 @ 9 1/2
Sheep—	
Ewes, head	4.50
Wethers	5.00
Lambs, head	5.00 @ 5.25

POTATOES

Wholesale selling prices:

Sweets, yellow, lug.	50
Merced, cwt.	1.50 @ 1.60
Idaho Rurals	1.00 @ 1.10
Idaho Russets	1.25 @ 1.30
Northern Burbanks	1.20 @ 1.40
Shimas	1.35 @ 1.40

ONIONS

Wholesale selling price:

Boiling Onions, lug.	1.00
Pickling, lug	1.25
Brown, cwt.	1.10
White Globe, lug.	.75
Garlic	.12
Sets, White and Brown, lb.	.10
White, lb.	.7
Yellow, lb.	.7

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	1.00 @ 1.10
Beets, doz.	.30
Beans—	
Wax	5 1/2 @ 6
Limas	5 1/2 @ 6
Green	5 1/2 @ 6
Cabbage, sack	1.00
Lb.	1 1/2
Carrots, doz.	.30
Cauliflower, doz.	1.35
Celery, doz.	.50 @ .75
Chicory, doz.	.40
Chives, doz.	1.00
Corn, lug	.55 @ .60
Cucumbers, lug	.40 @ .45
Pickling, lug	1.00 @ 1.50
Egg Plant, lb.	3 @ 3 1/2
Escarole, doz.	.40
Horseradish, lb.	.15
Leeks, doz.	.40
Lettuce, doz.	.25
Crate	1.10
Mint, doz.	.40
Okra, lb.	.5 @ .6
Onions, Green, bunch.	.20
Oyster Plant, doz.	.40
Parsnips, doz.	.35
Peas, Telephone	7 1/2 @ 8
Peppers—	
Bells	3 1/2 @ 4
Chili, lb.	3 @ 3 1/2
Pimientos, lb.	7 1/2 @ 8
Rhubarb—	
Crimson Winter, box.	.75
Strawberry	.75 @ .85
Spinach, doz.	.20
Squash—	
Crookneck, box	.40
Hubbard, lb.	1 1/2 @ 2
Summer, lug	.40 @ .45
Tomatoes—	
Lug	.50 @ .60
Turnips	.40

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflower	.80 @ 1.00
Jonathans	1.75 @ 1.90
Pearmain, Red	.90 @ .95
King Davids	1.75 @ 2.00
Spitzenberg	1.20 @ 1.35
Crabapples, box	1.50
Bananas, lb.	.4
Berries—	
Strawberries, basket	.5 @ .10
Blackberries, basket	.5 @ .6

Raspberries, basket	10 @ 14
Cantaloupes—	
Paul Rose, crate	1.35
Columbia, large crate	1.50
Pineapple, crate	1.25
Persian	2.25
Tip Top, small crate	.50
Casabas, crate	1.50
Cranberries, bbl.	10.00
Figs—	
Black	.65 @ .75
White	.65 @ .75
Grapes—	
Black Hamburg, lug	70 @ 85
Malagas, lug	.75 @ .80
Morocco, lug	1.00
Muscats, lug	.75 @ .80
Concord, two-third crate	1.10
Tokay, lug	1.00
Cornichon, lug	1.00
Red Emperor, lug	1.00
Guavas, lb.	.6
Peaches—	
Clings, box	.65 @ .75
Freestones, lug	.65 @ .75
Elbertas, lb.	1 1/2 @ 2
Pears, Bartlett, box	2.00
Prunes, Italian and German, lug	1.25 @ 2.00
Pineapples, lb.	.4
Quinces, lug	.45 @ .50
Watermelons, lb.	1 @ 1 1/2

CITRUS FRUIT

Wholesale selling price:

Lemons	1.75 @ 2.25
Juice Lemons	1.25
Grapefruit, Seedless	5.00 @ 5.50
Limes, basket	1.00
Valencias	4.50 @ 5.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, boxes.	.8 @ 9
Apricots	.9 @ 16
Peaches	.5 @ 7
Pears, lb.	.11
Prunes, fancy pack	7 1/2 @ 12 1/2

NUTS

Walnuts	1914	1915
No. 1	16.50	\$13.60
No. 2	12.00	10.60
Buds	20.00	17.00
Jumbos	18.50	16.60

See almond quotations by Association under San Francisco.

Peanuts—	
California, Raw	.6
Japan	5 1/2 @ 6
Eastern	7 @ 7 1/2
Chinese	.5

HONEY

Wholesale selling price:

Comb, Fancy, Water White	15 @ 16
White	15
Extracted Water White	7 1/2 @ 8
White	6 1/2
Light Amber	.6
Beeswax	.25 @ .26

RICE

Wholesale selling price:

California	4.25 @ 4.75
Broken	2.75 @ 4.25

BEANS

Wholesale selling price:

Limas	5.25
Lady Washington	5.25
Pinks	4.50
Black Eyes	4.50
Lentils	12.50
Small White	5.00
Garbanzos	6.00

HAY

Prices to producer f. o. b. Los Angeles:

Barley	13.00 @ 15.00
Wheat Hay	11.00 @ 14.00
Tame Oat	13.00 @ 17.00
Alfalfa	11.50 @ 14.00
Volunteer	6.00 @ 8.00
Straw	5.00 @ 6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.10
Corn, White	2.20
Wheat	1.95 @ 2.00
Oats, White	1.75
Oats, Hulled	2.25
Egyptian Corn	1.90
Kaoliangs	1.50
Barley Seed	1.55
Barley, Hulled	1.90
Kaffir	1.75
Milo	1.65

Sunflower Seed	7.00 @ 7.10
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FEED STUFF

Wholesale selling prices f. o. b. Los Angeles.

Bran, Heavy	1.60
Alfalfa Meal	1.20 @ 2.10
Alfalfa Molasses, per cwt.	1.25
Beef Scraps	3.00 @ 3.10
Beet Pulp	1.20
Cracked Corn, cwt.	2.45
Cracked Wheat, cwt.	2.10
Cotton Seed Meal	1.80
Bone, Green	1.75 @ 1.85
Meat Meal	3.00 @ 3.10
Charcoal	1.90 @ 2.00
Oil Cake Meal	2.50
Fish Meal	3.15 @ 3.25
Rolled Barley	1.55
Rolled Oats	1.80
Middlings	1.90
O. & W. Middlings	1.80
Feed Meal	2.20
Scratch Feed	2.10 @ 2.20
Oyster Shell	1.15 @ 1.25
Scratch Gritlets	2.30 @ 2.40
Poultry Mash, 90-lb. sk.	1.90 @ 2.00

San Francisco Market

SAN FRANCISCO, Oct. 5, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fresh Extras	26 1/2
Prime Firsts	25
Firsts	24

CHEESE

Wholesaler to retailer.

Young America	14
California Flats	12 @ 15 1/2
New York Cheddar	19
California Cheddar	16
Oregon Twins	13
Oregon Young America, fancy	14 1/2

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:	
Fresh, Extras	.42
Select Pullets	.37 1/2
Hens, lb.	13 @ 17
Fryers	23 @ 25
Broilers	25 @ 28
Roosters—	
Young	22 @ 25
Old	8 @ 10
Squabs	2.50 @ 3.50
Turkeys	17 @ 25
Ducks	12 @ 15
Geese	11 @ 15
Belgian Hares—	
Live Weight	.7 @ .9
Dressed	.12 1/2

LIVE STOCK

San Francisco prices, gross weight:

Steers	4 @ 6 1/2
Cows and Heifers	3 @ 5 1/2
Calves, lb., live wt.	.6 @ .9
Hogs	4 @ 6 1/2
Wethers	6 @ 6 1/2
Ewes	5 @ 5 1/2
Milk Lambs, lb.	7 @ 7 1/2

POTATOES

Wholesale selling price:

Salinas Burbanks, cwt.	1.25 @ 1.45
Delta Burbanks, cwt.	.60 @ 1.00
Sweets	1.25 @ 1.50

ONIONS

Wholesale selling price:

Onions, cwt.	.60 @ .65
Garlic	.9 @ 10

VEGETABLES

Wholesale selling price:

Artichokes, doz.	20 @ 35
Beans—	
String, lb.	1 1/2 @ 2 1/2
Limas, lb.	2 @ 2 1/2
Wax, lb.	2 @ 3
Celery, bunch	10 @ 20

WEATHER CONDITIONS

For the Week Ending October 2, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

—Rainfall Data—

Temperature Data

	Past Week	Seasonal to Date	Normal to Date	—Past Week—	Maxi-mum	Mini-mum
Eureka	.07	.37	1.46	62	46	
Red Bluff	.00	.00	.90	92	52	
Sacramento	.00	.01	.44	90	48	
San Francisco	.00	.01	.34	82	50	
San Jose	.00	.04	.42	88	44	
Fresno	.00	.00	.33	94	52	
Independence	.00	.10	.30	86	38	
San Luis Obispo	.00	.01	.53	84	48	
Los Angeles	.00	.00	.08	78	54	
San Diego	.00	.00	.08	70	56	

Corn, sack	1.25 @ 2.00
Cucumbers, lug	.30 @ .40
Eggplant, lug	.30 @ .50
Okra, lug.	.40 @ .60
Peppers—	
Bell, box	.30 @ .45
Chili, Mexican, lug.	.30 @ .45
Squash, Summer	.25 @ .40
Tomatoes, lug	.20 @ .35

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflower	.60 @ .90
Newtown Pippins	.70 @ 1.00
Jonathans	.60 @ 1.00
Bananas, Hawaiian, bunch.	.75 @ 1.25
Blackberries, chest	3.50 @ 5.00
Cantaloupes—	
Delta, lugs	.40 @ .75
Turlock	.90 @ 1.15
Casabas, crate	.40 @ .50
Cranberries, Oregon, Bu.	2.50 @ 3.00
Figs, box, black	.40 @ .55
White	.25 @ .40
Grapes—	
Tokay, crate	.50 @ .70
Malagas, crate	.60 @ .65
Muscats, crate	.55 @ .65
Isabella	.90 @ 1.00
Seedless	.75 @ .90
Wine Grapes, Zinfandel, ton.	12.00 @ 16.00
Wine Grapes, White, ton	10.00
Huckleberries, lb.	.4 @ .7
Muskmelons, box	.75 @ 1.00
Peaches, lugs	.35 @ .50
Salways, wrapped	.30 @ .50
Pears, Bartlett	1.00 @ 1.50
Lake Co.	1.70 @ 1.85
Persimmons, box	1.00 @ 1.25
Pineapples, doz.	1.25 @ 1.75
Pomegranates, small boxes.	50 @ 1.00
Quinces, box	.50 @ .65
Raspberries, chest	5.00 @ 8.00
Strawberries, chest	4.00 @ 6.00
Watermelons doz.	1.00 @ 2.50

CITRUS FRUIT

Wholesale selling price:

Grapefruit, seedless	2.50 @ 4.00
Lemons	1.50 @ 2.75
Lemonettes	1.25 @ 1.75
Limes, Mex., cs.	4.00 @ 5.00
Valencias	3.75 @ 4.75

DRIED FRUITS

Wholesale Prices are:

PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3 1/2 c. All outside sections 1/4 c lower.	
Other Fruits. Stand—	
50-lb. boxes	ard. Choice Choice Fancy
Apricots	6 3/4 c 7 3/4 c 8 3/4 c 9 c
Peaches	3

in previous years, showing the result of the short crop. Alfalfa is scarce with very little coming in from river sections and that which is shipped in from the interior is of poor quality and undesirable. A good grade of alfalfa will sell readily at quotations. Straw is in light supply and with a demand equally light.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (14 bales)	14.50@16.00
No. 1 Wheat or Wheat and Oat	12.00@14.00
No. 2 Wheat or Wheat and Oat	8.50@11.00
Choice Tame Oat	12.00@13.50
Other Tame Oat	9.00@11.00
Wild Oat	7.00@10.00
Alfalfa	10.00@13.00
Stock Hay	6.00@7.00
No. 1 Barley Straw	25@40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.55@1.57 1/2
Blue Stem	1.67 1/2@1.70
Barley Feed	1.20@1.22 1/2
Shipping and Breeding	1.25@1.27 1/2
Corn, Eastern Yellow	1.67 1/2
Oats, Red, Feed	1.25@1.35
Oats, Red, Seed	1.35@1.40
Oats, White	1.25@1.32 1/2
Oats, Black, Feed	2.00@2.25
Millet	2 1/2@3
Rape	2 1/4
Flaxseed	5@5 1/2
Rye	2.00@2.25

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	15.00@16.00
Bran, ton	26.00@27.00
Feed Cornmeal	41.00@42.00
Cracked Corn	41.00@42.00
Rolled Barley, ton	25.50@26.50
Middlings	30.00@32.00
Shorts	27.00@28.00
Oilcake Meal	37.50@39.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Oct. 6, 1915.

A slightly easier feeling is manifested in the orange market. This is perhaps because of heavy supplies of peaches in part, but more because of the large number of new crop Porto Ricos and Jamaicas being received at Atlantic points. On Monday there were 4025 boxes of Porto Rico oranges sold on the New York docks. A slight shading in price, probably not over 15 to 25 cents, is to be noted. The demand for Californians, however, is good. A shipment of 310 boxes per week will clean up before the first of November.

A good demand for lemons has nearly cleaned up the large supply in California storerooms. There are probably not over 200 cars stored at this writing and these are being shipped as rapidly as possible. In addition the new cutting is being shipped daily. The surplus stock will be cleaned up within the next 30 or possibly 60 days. The prices are running at the present time around \$2.50 to \$2.90.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914, 32,349 carloads, lemons 6566, total 39,915. To same date last season oranges 37,441, lemons 2777, total 40,218. Tulare County this season, oranges 5651, lemons 204, total 5855. No shipments have been made from Northern California points for the past two weeks.

NEW YORK, Oct. 4.—Ten cars Valencias, one car lemons and one mixed car sold. Valencias fully 25 cents higher; lemons unchanged. Weather fair.

VALENCIAS—	Avge.
Old Mission, xf., Chapman	6.20
Old Mission, fy., Chapman	6.20
Golden Eagle, sd., Chapman	4.90
Lady Rowena, Chapman	3.60
Old Mission, xf., Chapman	6.95
Old Mission, fy., Chapman	6.10
Golden Eagle, Chapman	4.90
Lady Rowena, Chapman	3.45
Wm. Tell, Or. Ex.	5.80
Golden Beaver, Or. Ex.	4.80
Atlas, Or. Ex.	5.60
Hector, Or. Ex.	4.80
Glendora Heights, Foothill	5.35
Evolution, A.C.G., Ex.	4.50
Alphabetical, Or. Ex.	5.35
Ticktock, Or. Ex.	5.10
Plain, Or. Ex.	4.70
Transcontinental, Or. Ex.	5.45
Goldfinch, Or. Ex.	5.10
Victoria, A.H. Ex.	4.85
Robusta, A.H. Ex.	4.90
Robusta, marked D	4.45
Navajo, A.H. Ex.	3.75
Hobo, A.H. Ex.	4.10
Hobo, marked D	3.85
Red C, Covina Ex.	4.65
Cougar, Covina Ex.	3.65
White C, Covina Ex.	2.95
Ala Loma, O.K. Ex.	4.15
Red Spray, O.K. Ex.	3.75
Owl, O.K. Ex.	3.05

GRAPEFRUIT—	Avge.
Rossmyne	1.85
Gill	1.50
VALENCIAS—HALVES—	Avge.
Red C	2.05
Cougar	1.60
LEMONS—	Avge.
Limoneira Co., Selected, vent.	33.30
Rossmyne Grove	3.20
Gill	3.00

PHILADELPHIA, Oct. 4.—Two cars sold. Market is unchanged.	
VALENCIAS—	Avge.
Copa de Oro, Or. Ex.	4.80
Transcontinental, Or. Ex.	4.50
Goldfinch, Or. Ex.	4.25
El Modena, Or. Ex.	3.90
Golden Beaver, Or. Ex.	4.55
Saddleback, Or. Ex.	3.70

PITTSBURGH, Oct. 4.—Four cars sold. Market lower on Valencias, steady on lemons.	
VALENCIAS—	Avge.

San Antonio Blue, S.A. Orchards.	\$4.70
Plain Ends, Or. Ex.	2.45
La Vista, Or. Ex.	4.50
Cowboy, Or. Ex.	4.65
SWEEETS—	Avge.
Tree Ripened	\$3.65
LEMONS—	Avge.
Las Fuentes, Crocker-Sperry Co.	\$3.10
Montecito	2.60

BOSTON, Oct. 4.—Five cars sold. Market is unchanged.	
VALENCIAS—	Avge.
Glendora Home, A.C.G. Ex.	\$4.95
Monopole, A.C.G. Ex.	3.90
El Pavo Real, S.T. Ex.	3.80
Carmencita, S.T. Ex.	5.20
Colombo, S.T. Ex.	4.95
LEMONS—	Avge.
Camel, Q.C. Ex.	\$2.85
Golden Bowl, V.C. Ex.	3.40
Silver Cord	3.20

CLEVELAND, Oct. 4.—Three cars sold. Market higher on both oranges and lemons.	
VALENCIAS—	Avge.
Jupiter, Amer. Ft. Dis.	\$4.45
Assyrian, Pac. F.P. Co.	3.30
Trail, A.C.G. Ex.	5.35
Canyon, A.C.G. Ex.	5.10
LEMONS—	Avge.
Squirrel, A.H. Ex.	\$2.70
Prairie Chicken, A.H. Ex.	2.45

ST. LOUIS, Oct. 4.—Four cars sold. Market steady.	
VALENCIAS—	Avge.
Minnehaha, C. M. Brown	\$2.55
Progressive, Or. Ex.	3.60
Searchlight, Or. Ex.	4.60
S.S. Brand, Or. Ex.	4.70
Progressive, unwrapped	2.20
Mupu, M.C. Assn.	4.85
South Mtn., M.C. Assn.	4.50
Orchard Run, M.C. Assn.	4.00
LEMONS—	Avge.
Pet., S.D. Ex.	\$2.95
Greyhound	2.75
Pup	2.80

CINCINNATI, Oct. 4.—Two cars sold. Market is steady.	
VALENCIAS—	Avge.
Liberty	\$4.00
Valley	3.60
Portola, S.T. Ex.	4.15

CHICAGO, Oct. 4.—Second and third crop strawberries are on the market in fair volume, selling at 2.50@3.50 for cases of 16 quarts. The season for strawberries has been unusually long. Apples, boxes, western stock, Jonathans, 1.75@2.00; Winter Banana, 2.50@3.00; Grimes Golden, 1.75@1.85; Delicious, 3.00@3.50; Oranges, boxes, fancy California Valencias, 5.75@6.00; choice, 5.25@5.50. Lemons, boxes, fancy California, 3.50@3.75; choice, 2.75@3.00. Plums, cases, 4 baskets, Hungarian, 1.00@1.25; Silver Egg, 1.00@1.10; Italian, 60@80. Grapes, cases, 4 baskets, seedless, 1.00@1.15; Malaga, 85@1.25; Tokay, 85@1.15. Pears, boxes, 50 pounds, Howells, 3.00; Beurre Hardy, 2.50@3.00; Clairegeau, 2.25@2.50; Winter Nellis, 2.00@2.50. Cantaloupes, standard cases, California, 1.50@1.75; pony crates, 60@75; flat cases, 40. Casabas, flat cases, 1.00.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Street Improvement

In cities of the sixth class have the board of trustees the right to improve a street, against the protest of a majority of the foot frontage on the street to be improved, should they deem it necessary for the best interest of the city to do so, and have the protestants a "day in court" should the trustees so decide?

If a petition having a majority of the foot frontage on a certain street is presented to the board of trustees for action, which they refuse or fail to take, does such refusal invalidate the petition or does it hold good as long as it is in their hands? Has a person signing a petition a right to protest the same, in case the trustees decide to take favorable action on same? After a petition has been filed with the city clerk can a person signing same erase his name?—Subscriber, Manhattan.

There are a number of different acts under which streets may be improved and it is therefore impossible to give a clear, definite answer to any one of the questions herein. Under at least one of the acts a protest of the majority of the foot frontage of a street to be improved absolutely kills the proposed improvement. On others of the acts the city council have the right to decide to improve a street over the protest. However, protestants may always bring the actions of the city

council into court by divers methods as may be particularly applicable to the case in question. In one or two of the acts a petition of the majority of the foot frontage is necessary to institute action, but generally speaking the petition is without legal effect other than to bring the proposed improvement to the attention of the council and is not in itself a recognized part of the proceedings; therefore the council could not be compelled to take action; your only remedy would be to elect a new council but it would seem that a petition in the usual case would be good for reasonable length of time. From the fact that a petition has no jurisdictional element in the institution of proceedings a person signing such petition would very probably have a right to protest the same, as protests are specifically provided for in the majority of the laws and may cause the council to lose jurisdiction to proceed. Upon the theory that a petition is not a legal requirement of the law, a person could undoubtedly erase his name from the petition at any time. But in any case where a petition would be necessary to vest a council with jurisdiction it would seem that it would be unlawful for the person to erase his name after petition has been duly filed. As above stated there are so many different street laws and so many different situations applicable to each that the above must be considered merely as a general statement and cannot be relied upon in any particular case.

Transaction on Sunday

A. demands from B. money due him on account on a Sunday. B. gives note dated on a Sunday to A. Is above transaction legal?—Subscriber, Chino.

A note executed upon Sunday or any other business transaction performed upon Sunday is perfectly legal within this state.

Care of Orchard

A sold a piece of young lemon orchard to B with a little cash, balance mortgaged for three years. A foreclosed the mortgage and bought the orchard back through the court. B has a right to stay one year after foreclosure as I am told. The trees have been neglected and will soon die if not watered and cultivated. How can the trees be saved? Has A a right to step in?—Subscriber, Chula Vista.

A has two remedies; by one he may have receiver appointed to take charge

of the property and preserve it from neglect, by the other he may procure an injunction to restrain the doing of any act to the injury of the property, before the sheriff's deed of conveyance. Either one of these remedies, as may be most applicable, can be obtained by filing an affidavit setting forth the facts with the court in the foreclosure case, thereupon procuring the appropriate orders. It will be necessary to have an attorney attend to the matter for you, as the average layman would not be able to draw the proper papers.

Using Patented Articles

I have often seen the statement that the patent laws permit anyone to manufacture and use patented articles for their own use. Is this correct? If so, may a patented process or method of handling fruits or nuts be used by the individual orchardist for nuts or fruit to be used in his own home or in case the same are to be sold?—Subscriber, Los Angeles.

The making of a patented invention for an amusement or scientific investigation, with no intent of using it, is not an actionable infringement, but it is otherwise where the thing may be sold or is put into actual use. The owner of a patented process can by injunction restrain anyone from making or using his process, except by his license, as that is the element constituting the monopoly of the patentee. If the patentee should bring suit to obtain damages for the infringement, he could only obtain the actual damages sustained by him during the time of the infringement for which the suit was brought. So that from a practical standpoint people do sometimes violate the rights of a patentee and use patented articles with impunity, but they have not the legal right.

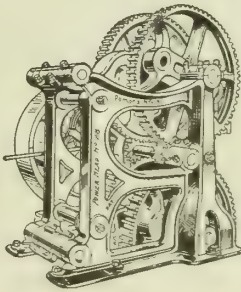
State Support for Child

If widow without means is trying to care for a grandchild which has been forsaken by both parents, can she obtain aid from the state?—Subscriber, Winton.

In 1913 a commission was appointed to investigate mothers and old age pensions, but nothing has as yet been done. Under subdivision 23 of what is known as the juvenile court act a provision is made for the maintenance of a dependent or delinquent person out of the county treasury to the extent of \$11 per month, so that if you would take the matter up with the probation officer of your county you could probably receive relief under the act.

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Pomona Mfg. Co.

Pomona, Cal.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF AUGUST 24, 1915

of California Cultivator, published weekly at Los Angeles, Cal., for Oct. 1, 1915.

NAME OF— POSTOFFICE ADDRESS.

Editor, C. B. Messenger Los Angeles, Cal.

Business Manager, Frank H. Thomas Los Angeles, Cal.

Publisher, Cultivator Pub. Co. Los Angeles, Cal.

Owners: (If a corporation, give its name and the names and addresses of stockholders holding 1 per cent or more of total amount of stock. If not a corporation, give names and addresses of individual owners.)

Frank H. Thomas, Los Angeles, Cal.

E. D. Thomas, Los Angeles, Cal.

R. M. Teague, San Dimas, Cal.

M. E. Teague, San Dimas, Cal.

Known bondholders, mortgages and other security holders, holding 1 per cent or more of total amount of bonds, mortgages or other securities:

None.

(If additional space is needed, a sheet of paper may be attached to this form.)

Average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above. (This information is required from daily newspapers only.)

FRANK H. THOMAS, Manager.

Sworn to and subscribed before me this 4th day of Oct., 1915.

(SEAL) H. E. STORRS, Notary.

(My commission expires March 19, 1917.)



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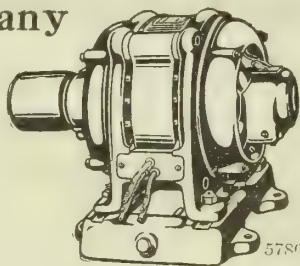
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Louden Barn Plans is not a catalog of barn equipment. It is a complete and valuable book of reference and instruction on barn construction.

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When Writing for This Book Please State When You Expect to Build, and How Many Cows and Horses You Want to House

We have designs for nearly 4,000 barns, and our architects will give your letter personal attention if we learn your exact requirements.

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Louden equipment makes possible a clean, sanitary barn with a minimum of expense. When cows are transferred from dark, dirty barns to Louden barns the milk flow often increases from 15 to 25 per cent, and the labor of caring for the herd is reduced from one-third to one-half. Louden equipment is just as great economy for the man with a half dozen head of stock as for the man with hundreds of animals. The percentage of labor saved is the same.

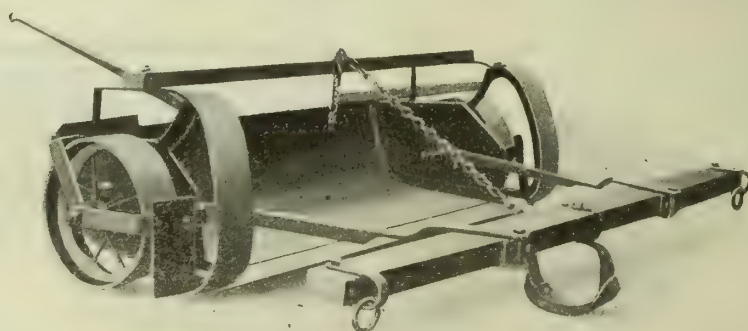
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LOS ANGELES

October 14, 1915

SAN FRANCISCO



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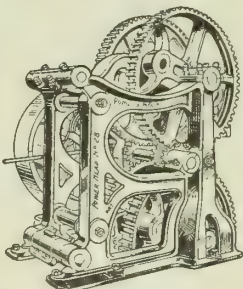


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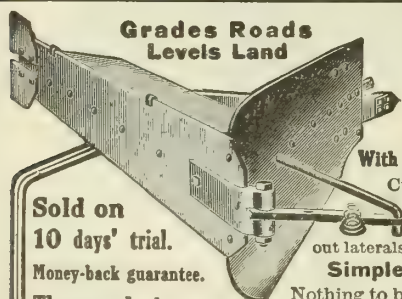
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 16

LOS ANGELES: THURSDAY, OCTOBER 14, 1915

One Dollar Yearly

Land Settlement and Lower Interest Rates

Dr. Elwood Mead for the California Rural Credits Commission Gives Reason for Better Methods and Lower Interest Rates for Farmers.

At the recent rural credits conference at the closing session of the International Irrigation Conference in San Francisco it was deemed wise to organize a committee to prosecute a campaign for rural credits legislation at the next session of the legislature. This committee is now getting into action. Meantime the rural credits commission appointed by Governor Johnson has formulated a statement through one of its members, Dr. Elwood Mead. This commission consists of Dr. Elwood Mead, professor of rural institutions, University of California, and for many years in active charge of rural credits and land settlement operations in Australia; Dr. David P. Barrows, dean of the faculties of the University of California; Col. Harris Weinstock, member of the industrial accident commission of California, and one of the representatives of this state on the commission on rural credits and agricultural finance that made a study tour of Europe in 1913; State Senator William E. Brown, of Los Angeles, and Mortimer Fleishhacker, a prominent financier of San Francisco. The statement endorsed by the commission is as follows:

* * *

THE act under which this commission was appointed requires it to investigate and consider "the question of land colonization and the various forms of land banks, cooperative credit unions and other rural credit systems adopted or proposed in this country or elsewhere, with a special view to the needs of the rural communities of this state." It must make a report to the governor on or before October 1, 1916.

The commission believes that the first step in this investigation should be to ascertain what is needed to promote the development and prosperity of rural life in California. To this end it intends holding public hearings in different sections of the state, which all interested in the subject are invited to attend and give evidence. These hearings will be begun in Sacramento on September 29 and will continue until the commission feels that it is fully informed regarding the causes which are now operating to retard the settlement and improvement of the state's agricultural lands and has given all who have suggestions to offer an opportunity to be heard.

No state has more to gain than California from improvement in methods of land settlement or from the adoption of a system of rural credits.

Notwithstanding its great natural advantages of climate, soil and wide range of products, there has come a halt in rural development. Over 1,000,000 acres of land susceptible of irrigation is uncultivated and awaiting settlement. Another million acres could be irrigated if a demand for land and water was assured.

The settlement and cultivation of these lands is needed to insure the continued growth and enduring prosperity of our cities. We ought, in this state, to produce more meat, butter, cheese and wool. We need more farms devoted to raising horses, cattle, hogs and sheep. The alfalfa fields need to be extended and the live stock grown thereon multiplied.

This cannot be hoped for until existing obstacles are removed. Interest rates must be lowered, the time for repayment of loans must be extended and more than all else there should be some organization that will give aid and direction to beginners so that unimproved land may be converted into habitable and productive farms with the least possible effort and waste of money and time. We want to attract the young, virile and ambitious. We want to keep the red blood on the farm. We are not doing these things now. A recent investigation of the

University of California showed the average of settlers in new developing districts to be about 45 years. Men ready to retire from active life buy farms; the boys and girls flock to the cities.

A recent report issued by the United States government shows an increase of 380,000 in the population of California during the last five years. Seventy-three per cent of this increase was in cities and towns of 8000 and over. The increase in farm population was so small as to cause anxiety and lead to a belief that changes in existing methods are desirable.

Selling land to settlers has become so difficult that commissions to land salesmen have reached the incredible figure of 25 to 30 per cent of the selling price. Reliable men engaged in the business say that even with these extraordinary commissions they are not prospering. When one considers the attractions of rural life in this state there is no other conclusion except that this halt in development is due to vital defects in our policies.

Two such defects are plainly apparent. Both are susceptible to removal if we set about it. The first is absence of aid and advice to settlers in the purchase and improvement of farms. The second, the high interest rates, the short time of repayment of loans and in many cases the inability to borrow money on any terms.

The farmers and settlers of California who have to borrow money pay more than double the average interest rate required of farmers in countries which have a rural credit system. Agriculture cannot develop under this handicap.

Below we give the interest rates paid by settlers in countries which have a rural credit system. They show the great disadvantages which California farmers labor under and also make apparent what an impulse would be given to rural development if we had such a system here:

Country—	Rate of Interest Per Cent.....	Time Given for Repaying Loan
Denmark	3	65 Yrs.
Italy	2.5	50 Yrs.
Holland	4.7	.....
*Norway	3.5	.....
Hungary	4	50 Yrs.
xRussia	4.5	55½ Yrs.
Austria	4 to 4.5	54½ Yrs.
Germany	3.5 to 4	56½ Yrs.
*France	4 to 4.5	75 Yrs.
Ireland	3	30 to 50 Yrs.
Spain	5 to 7	.....
Belgium	4.5	30 Yrs.
Switzerland	4.5	57 Yrs.

(To enable farmers to buy land, and 4 per cent to those who own land.)

x(To cover both amortization payment and cost of administration.)

°(To enable young farmers to buy farms 2.5 to 3 per cent.)

The following list includes countries with less development, less accumulated wealth, less population than the United States, and consequently less able to provide low interest rates:

Country—	Rate of Interest Per Cent.....	Time Given for Repaying Loan..
New Zealand....	4	36½ Yrs.

Victoria, Aus...	4.5	36½ Yrs.
New So. Wales	3 to 5	30 to 40 Yrs.
Other Austral- ian states	4 to 5	30 to 40 Yrs.
British and German So.	.....	.....
Africa	4	.....
Chile	4	33 Yrs.
Argentine	4	.....
*British Colum- bia .....	.....	36½ Yrs.

*(One per cent more than the interest on state bonds.)

The farmers of California with no rural credit system pay from six to 12 per cent interest on loans running from three to ten years, and often with excessive commissions for securing the loan or its renewal.

The introduction of rural credit systems in other countries has in every case been a financial success and a benefit to all classes of people. It has extended the area of land cultivated, increased the acreage yield, led to the building of better houses and to rendering the social life of the farm more attractive, has tended to keep the boys and girls on the farm and check the drift to cities and to other countries. Nowhere has it been either

an agricultural or financial failure, and these great results have been accomplished in each case without any disturbance or loss to the existing commercial banking institutions. Australia has perhaps the most liberal and most highly organized rural credit system of any country, but the introduction of this system has not injured the commercial banks. They have been more prosperous since its introduction than before; not a single bank has failed and the dividend rate last year varied from five and one-half to 14 per cent with liberal increases in their reserves.

It is hoped that out of this investigation there will come some plan that will give the farmers of this state the same credit advantages that are enjoyed by the farmers of other countries, either through the use of the state's credit or through improvements in existing banking facilities.

It is believed that what other countries have done this state should do, and that it only requires an understanding of the subject and the cooperation of all classes to be benefited to bring about the desired results.

Sacramento Sale of Pure Bred Holsteins

164 Pure Breds Command \$75,000. Spirited Bidding and Fair Prices, Though One or Two Animals of High Degree Sold Lower Than Expected. By W. S. Guilford.

THE sale of 164 head of Holsteins from the herds of A. W. Morris & Sons, Woodland, and J. W. McAlister & Son, Chico, was held at the State Fair Grounds, Sacramento, October 6-7, 1915.

Whether or not a sale of pure bred cattle is to be considered a success depends on a number of things. Some of these are the prices secured, the quality of the cattle, the purchasers, the status of the pure bred industry of the territory in which the sale is held and general business conditions.

With all of these things in mind it can be honestly and emphatically stated that this was one of the greatest sales of pure bred animals ever held. The price was not the highest ever secured for a large number of Holsteins, but it ranks with the best; a very superior lot of individuals, royally bred, were sold; they were bought by discriminating buyers who know values and who will by constructive breeding add glory to the breed and to the districts to which they go; the sale was held in a territory where the pure bred industry is more or less in its infancy so far as number of breeders is concerned as compared with some districts in the Eastern states; the money market is tight, to say the least, and general business conditions are not such as warrant large expenditures.

One hundred and sixty-four head sold for about \$76,000. The average per head was \$459.

Some of the high prices paid were: \$2500 for Aralia De Kol Pontiac Mead, by S. C. Renaud of Phoenix, Arizona, which price was considered

a bargain. The calf is a beautiful six months old, almost all white, and with a long line of heavy milk and butter producing ancestors; \$1550 by F. J. Kiesel of Sacramento for Jane Korn-dyke of Riverside, a cow with a record of 31 pounds of butter in a week; \$1150 for Helen Nye Skylark by F. J. Kiesel (this is another record cow, having over 28 pounds of butter in a week to her credit); \$1500 by Alex Whaley of Tulare for Segis Pontiac De Kol Burke III, a calf born in February, 1915; \$1500 for Winnie Korndyke Cornucopia De Kol, a 25-pound record cow, by the J. S. Gibson Company; \$1150 for Unedea Korndyke Abbie, a 28-pound cow, by the J. S. Gibson Company; \$2000 for the five-year-old herd bull, King Segis Pontiac Emperor, by H. E. Cornwell, Modesto; \$1000 for Segis De Kol Pontiac Burke, a bull just past a year old, by W. G. Stimmel, superintendent of the Vina Ranch of the Stanford University at Vina.

The high prices were paid for cows with high butter records and young bulls from ancestors with high records.

The J. S. Gibson Company, Williams, bought 13 head for which they paid \$9150.

F. J. Kiesel, the prominent Sacramento banker, farmer and stock grower, bought a number of the choice things of the sale.

J. M. Henderson, another Sacramento banker and farmer, bought a great many.

W. H. Taylor, formerly of the Whit-tier school herd, but now manager for Mrs. Anita Baldwin of Los Angeles,

Continued on Page 374

More HOP Profits More Bales per Acre



Hop Growers who have taken advantage of our free service department have found it profitable. They have made money through our advice. We have shown them how to increase the number of bales per acre. What we have done for others we will do for you. Write us fully and frankly. Let us know the exact conditions you are working under. Send a sample of soil and we will tell you how we can help you. You will not be obligated in any way. We want every Hop Grower to know all about

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Still Another From Sonoma County Says:—"HOP increased my crop from 8.36 bales per acre to 13.14 bales."

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is a little book that tells you in plain English some valuable truths about the correct way to put back into the soil those elements which the crops take out. It tells you how to increase the size of your crops and how to make your land more productive. Write today for a copy free.

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POTASH FROM THE PACIFIC



IN issuing a statement as to a new bulletin (No. 150) touching upon the supply of potash the department of agriculture writes:

"Any scheme for using kelp on a large scale as a fertilizer must be based on some method of concentrating its valuable constituents, because green kelp contains so much water. Investigations seem to show that at present, considering the economic conditions on the Pacific Coast, kelp may be best prepared for the trade merely by drying and grinding.

"Even wet kelp, which contains 85 per cent moisture, contains two and one-half per cent of potash, where stable manure, alfalfa, and cowpeas all contain less than one per cent. Drying, however, increases the percentage of potash to 15.8 per cent. This commercial product also has 1.6 per cent of nitrogen and some phosphorus. On the retail market of the Pacific Coast the total value of a ton of kelp should be, according to estimates, \$22.94. In the Eastern wholesale market it should bring \$16.45.

"The main fertilizers termed potash carriers today used in this country are the German potash salts. Laboratory tests have shown that kelp is quite as effective as the potash salts, and dry kelp would enter the trade as a 'potash carrier' to compete with the imported products."

"Kelp has been used as a fertilizer for centuries in the British Isles and has been so valued there that lands carrying kelp-harvesting privileges brought special prices. In New England also kelp has been found valuable. The kelp on the Pacific Coast differs from the seaweeds of the Atlantic because of its much greater size. Already this product of the sea gardens of the West has been used in Alaska, particularly in fertilizing potatoes and on truck gardens. Near San Pedro kelp has been harvested mechanically and shipped in the crude, undried condition to the ranches and orchards of that part of the state.

How Kelp Must Be Prepared

"The new bulletin of the department goes into considerable detail in describing how kelp should be harvested, dried, and ground into a coarse powder for bagging and mixing.

"Since the ingredients of kelp are either neutral or beneficial in their influence on plant growth, to prepare kelp for use as a fertilizer it is necessary only to convert it into a form in which it can be preserved and shipped. To accomplish this it is sufficient to harvest, drive off the water which it contains and grind it to a coarse powder for bagging and mixing.

"Kelp is harvested by a machine which embodies the principles of the mowing machine or reaper used in harvesting agricultural products. The harvester actually in operation consists essentially of a barge over the end of which projects an adjustable frame, supporting an endless belt, tilted to form an inclined plane. Across the lower end of the belt extends a horizontal cutting bar about ten feet in length, of the type used in the construction of reapers, which is supplied

at each end by two perpendicular knives. By this arrangement a swath may be cut through the kelp ten feet in width and of a depth determined by the adjustment of the supporting frame. Back of the knives the belt, constructed of chains and netting, is operated in such a way as to catch the severed kelp and lift it upon the barge. Beneath the upper end of the belt is a chopper into which the kelp drops and by which it is cut into short lengths. From this it passes onto a short conveyor which loads it into a large scow made fast alongside. The small barge carrying the cutter is moved along the side of the large scow so that the load of cut kelp is distributed evenly. To operate the moving parts of the machine a gasoline engine is provided. The barge and scow are pushed through the kelp groves by a launch, which serves also to tow them to the dock for unloading.

"The cost of cutting will be determined by the conditions obtaining at the place of cutting. The results obtained so far indicate that this will be not more than 50 cents per raw ton, and easily may be reduced to 25 cents or less, inclusive of unloading at the dock.

"It can not be expected that the cutter now in operation embodies all the perfections to which such a machine is susceptible, or that improvements in the machine will not reduce the cost of cutting. Certain features of the present method of operation are objectionable, but these almost certainly will disappear when a fuller experience shall have pointed them out and

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the means of circumventing them. Cutters of other forms and modifications of the present cutter have been designed and patented. In spite of its imperfections the kelp cutter now in operation must be regarded as an unqualified solution of the problem of the economical harvesting of kelp.

"The chopped kelp may be unloaded at the dock by an elevator such as may be used in unloading cannery waste.

"Since, under Atlantic Coast conditions, fish pomace containing 55 to 60 per cent water may be dried in the direct heat rotary drier at a cost of about 50 cents per dry ton, it seems reasonable to believe that it should be possible to dry kelp, containing 85 to 90 per cent water, at a cost of \$1 per dry ton. After drying it may be found desirable to grind the kelp for mixing. Dry kelp, especially when hot, is quite brittle and grinds easily."

OLIVES MEAN MILLIONS

Little was known in this state about olive culture until 1909. Three years later the production was estimated at 1000 tons per annum, which grew to 4000 tons in 1914 and 7000 tons in 1915. Of this year's crop perhaps 1000 tons has not been consumed and at the rate young trees are coming into bearing and new acreage is being planted the urgent need of increasing the demand and providing marketing facilities is apparent. A majority of the olive trees in California today are less than ten years old. Olive trees increase in bearing productivity up to 75 years of age.

There are something like 2000 acres of new trees coming into bearing each year, which, in ten years, will produce 6000 tons of fruit per year to be added to the present production. The problem is not at all alarming when the possible consumption of the fruit is considered. The ripe olive is a food, not a relish nor a luxury. Analysis proves that ripe olives contain half the food value of butter.

If every family in the United States were to place one single ripe olive on the dinner table each Sunday in the year, the present production would be entirely consumed and the normal increase in the country's population would keep pace with the normal increase in olive production. At the present time the consumption of ripe olives in the East is practically nil because the knowledge of the delicious, health giving, and food properties of the fruit is very limited. Practically the entire production is consumed by the 5,000,000 inhabitants of the Pacific Coast. Should the consumption of ripe olives throughout the country be increased to the same ratio as prevails on the Pacific Coast, our present production would only be about one-twentieth of the demand. That would mean high prices to the grower for the fruit and tremendous increases in the value of olive lands.

One explanation of the present low consumption of ripe olives even on the Pacific Coast is to be found in the high price charged the consumer for the fruit, putting it in the luxury class and out of the reach of the masses. Figured at the "per order" or per package price paid by the diner in the cafe, ripe olives are costing the consumer from \$2000 to \$5000 per ton. Yet the grower who gets \$150 per ton is indeed fortunate.

"The solution of the growers' problems, and they are serious problems crying for immediate solution, lies in organization. More scientific methods must be encouraged looking to the pro-

duction of more and better grades of fruit. Standardization of sizes and packing methods demands attention. An intelligent campaign of educational publicity must be inaugurated throughout the country to teach the people to eat ripe olives daily as a standard food of high nutritious and medicinal value. The question of whether present independent packing facilities shall be utilized or cooperative local plants established bears consideration. Methods of distribution and sale must be considered, in order to keep the price to the consumer as near that received by the grower as the cost of efficient selling machinery will permit.

FUNGUS DISEASE MEETINGS

The Riverside citrus experiment station has arranged a series of meetings for the latter part of this month. Fungus diseases are to be discussed, brown rot, gummosis, scaly bark, wither tip and fruit spots.

On Monday, October 25, there will

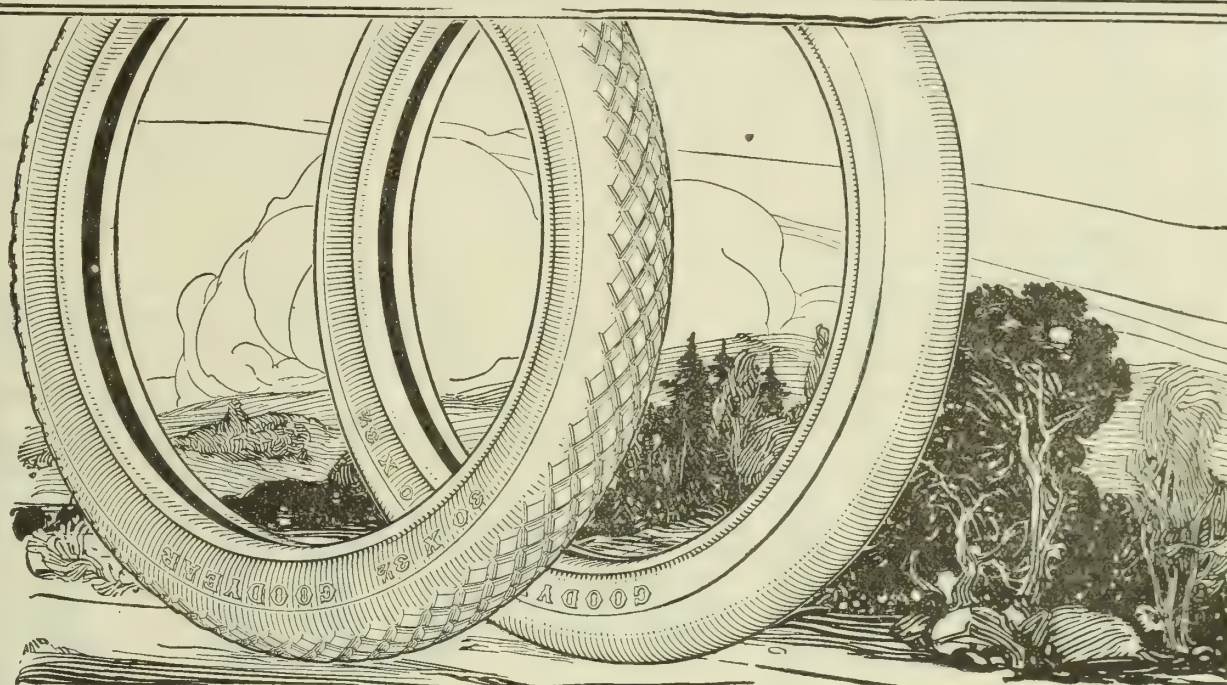
be meetings at Porterville addressed by Dr. Barrett and at La Verne, by Prof. Fawcett. On Tuesday, October 26, Dr. Barrett will speak at Lindsay and Prof. Fawcett at Ontario-Cuamonga; Thursday, Oct. 28, Villa Park, Prof. Fawcett; Friday, Oct. 29, Whittier, Prof. Fawcett, Redlands, Dr. Barrett.

AHUACATE ASSOCIATION

The California Ahuacate Association will hold its first general meeting at Hotel Alexandria, Los Angeles, October 23. The program will begin at 9 o'clock a. m. and continue to 4:30 or 5 p. m. with an intermission for lunch hour. Everyone interested in the ahuate (avocado) is invited to be present. The arrangement for speakers guarantees an interesting and instructive program and includes among other speakers such men as Dr. J. Eliot Coit, Prof. I. J. Condit and Prof. M. E. Jaffa, all of University of California; H. J. Webber, of state experiment station at Riverside; David

Fairchild, head of foreign seed and plant introduction, bureau of plant industry, and Wilson Popenoe, agricultural explorer, bureau of plant industry, United States agricultural department; Judge Charles Silent, of Glendora; C. P. Taft, of Orange; F. O. Popenoe, of Altadena; John C. Bosche, importer and exporter of ahuates, formerly of Mexico City; E. B. Rivers, of firm of Rivers Brothers, importers and exporters of fruit, and Edwin G. Hart, president of the association.

An exhibit of mature fruit will be an attractive adjunct of the meeting. The association is endeavoring to get into communication with all who will have fruit at that time and will take it as a favor if anyone having fruit will write or telephone to Edwin G. Hart, 917 Union Oil building, Los Angeles. The association is also desirous of securing 500 or more ripe or nearly ripe thin skin fruit for experimental work in which the University of California has agreed to cooperate.



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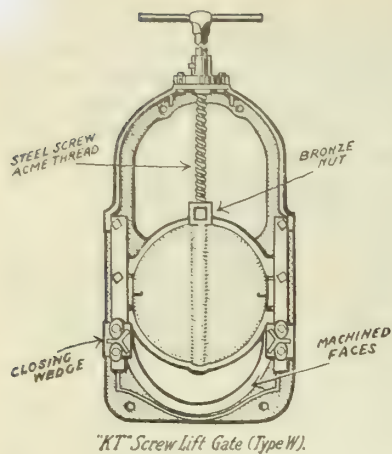
Now there can be no reasonable question about Goodyear superiority. If you have such a question, make a comparison. You owe that to yourself.

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169 Eleventh Street, San Francisco

Deciduous Fruits

CARING FOR THE WALNUT BUDS

Written for California Cultivator
By Claud D. Tribble



LL buds used in a field nursery are or should be placed on the north or northeast side of the tree, and it is a very good rule to plant the budded tree in the orchard in the same position in which it grew in the nursery row. In July and August budding, some of the buds may start; if so these must be tied to the stock above the bud to make it grow a straight tree, otherwise if this should grow out or downward without any attention, the wood becomes hard and will break in trying to pull it into place the following spring.

After all stocks are stubbed off in the spring prompt attention must be given in staking, otherwise the tree will be crooked. We place the stake on the southwest side of the stock and bring the bud to this, using sisal or Manila binder twine and tying loosely to prevent the growth from cutting off the tree, as it would do if tied tightly against the stake. Stakes of about three and one-half feet are tall enough for nursery purposes and they can be as small as three-quarters of an inch by three-quarters of an inch, as it does not take a strong stake to support the tree. The method of budding described in the Cultivator of September 16 is very successful in top working large trees where the tops have been cut off and new growth trained and grown properly, and practically the same care of the buds is required. Laths about six feet long are nailed to the trees to support the growth. The growth of these must be tied loosely to prevent the string from cutting off the growth, and the buds should be trained in the proper direction by tying along the lath about two feet apart. Do not tip the bud in a top worked tree as it prevents the tree spreading as it should and causes the bud to throw out a mass of small limbs and prevents the proper heading of the tree. In heading a top worked walnut tree make the main limbs grow as far out or as tall as possible to make a broad top, as most of the walnuts are produced on the outer part of the tree and the more surface given the larger the crop.

In the past three years the red hump-backed caterpillar and a smaller caterpillar have worked on the foliage of the walnuts and other trees and they are becoming so numerous that they check the growth of a tree. These can be killed by an arsenical spray, but it is usually cheaper to have a bucket of distillate and go among the trees, cut off the leaves they are on and dip them in the distillate. These insects colonize on one limb at a time and often on one or two limbs, thus they are easily taken from the tree.

SACRAMENTO VALLEY PRUNE NOTES

Written for the California Cultivator
By Sacramento Valley Correspondent

Prune growers in the upper Sacramento Valley territory are quite generally holding for better prices than are being offered, and a good many have pooled their crop with the Cali-

fornia Cured Fruit Exchange. Buyers are offering three and one-half to three and three-quarter cents per pound. Some crops are being offered at \$100 per ton for orchard run.

Prune picking started early this season because of a little weather about September 1 that threatened rain. Some of the first prunes gathered were a little green and have dried out more than those being picked now (September 17). In some orchards it is costing as much to knock the prunes off the trees as the cost of picking up the fruit. In some others pickers are being paid ten cents per box when the pickers knock off the prunes and pick them up and five cents per box when the prunes are knocked off for the pickers.

A good many prune crops are being picked and cured at a cost of \$20 per ton, this covering picking, hauling in, dipping, drying, sweating and sacking.

Two tons of green prunes are making an average of about one ton of cured fruit.

The spider has been a serious pest in prune orchards this season. A thorough winter spraying with an oil spray will be given many orchards in an attempt to kill spider eggs and clean up brown apricot scale which is thick in some places.

There are many trees in Sacramento Valley orchards that are producing 500 or more pounds of dried prunes this season. At four cents per pound this is \$20 per tree. Unfortunately all of the trees in an orchard will not do this, but it gives an idea of the wisdom of selecting buds from superior trees for growing an orchard, and it shows what revenue might be secured from an orchard of trees properly selected and carefully cared for.

YUCAIPA APPLE SHOW

Yucaipa boosters are planning for their "best ever" when the big red apple will be given prominence. The show dates are November 4, 5, 6.

BETTER DISTRIBUTION

With disaster facing the peach grower he is looking in all directions to learn what steps may be taken before another year to give relief. The dried fruit growers are already perfecting an organization to the end that their product may be more intelligently handled. The cannery men are likewise seeking a more certain outlet and are discussing the question "Why compete with ourselves?" Mr. Vernon Campbell, formerly at the head of the Tulare County Fruit Growers' Association, has taken steps to encourage an association of cooperative canneries. We have asked Mr. Campbell for information regarding this organization and he writes:

"No doubt you are well acquainted with the unsatisfactory condition prevailing in the deciduous fruit market at the present time. The peach growers are having the greatest difficulty in the marketing of their crops; in fact, thousands of tons have gone and are going to waste on the ground. Competition between canners has placed the price of the finished product so low that most of the packers are losing money this year. It is esti-

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Because

It kills the scale as thoroughly as fumigation.

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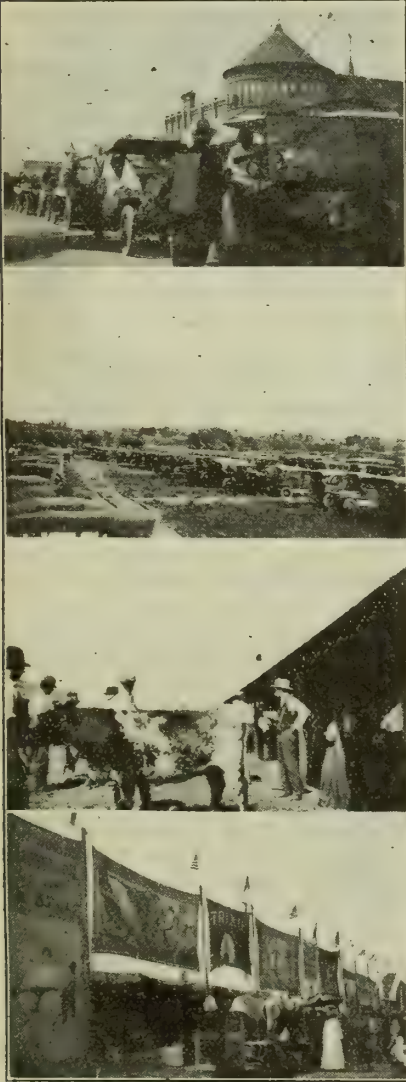
mated that there will be about 50 per cent pack of California canned fruits.

"There seems to be no remedy for the present condition except a better method of distribution. The consumer is now paying about three times what the packer and the jobber receive. It cannot be shown that the various middlemen are making an enormous profit, but the system of distribution is so complicated that the cost of getting the finished product to the consumer puts the price too high for the average pocketbook. As an illustration, the canners today are selling extra standard cling peaches at about \$1.00 per dozen. These goods are selling under jobbers' private brand throughout the country at from 30 to 35 cents, about three and one-half times the amount received by the canner. This difference is noticeable in all California fruit products. The California fruit growers must inaugurate a different system of distribution—some plan that will put fruit to the consumer for less money.

"The California Growers' Association has been formed with that purpose in view. New member associations are being brought in and we expect to be strong enough next year to put our direct sales system in operation. Our plan will put California fruits, both canned and dried, to the consumer in the East at less than one-half of the present retail sales price and will return the grower a good fair price for the fruit and allow the merchant a fair margin of profit."

RIVERSIDE COUNTY FAIR
Editorial Correspondence

Riverside boasts of some of the finest weather made in California. Usually she delivers the goods but there do be some people who have occasionally claimed that there are days when the



RIVERSIDE COUNTY FAIR
Upper, Perris Valley Automobile Contingency Coming Into Town. Acres of Automobiles Parked on Fair Grounds. Judging Shorthorns. Vaudeville Row.

weather gets a bit warm. This is greatly to be desired because the sugar which goes into Riverside's sweetest of oranges is best manufactured under the warm rays of Old Sol so that this summer Riverside orange growers have been a bit disconcerted because of the continual cool season which, while most agreeable to mortals, has not been as strong a factor horticulturally as is often the case, but when it came to Riverside County fair week a better disposition was shown and a thoroughly warm reception was given to all who attended the fair, and there was a bunch of us. A very faint idea of the crowds may be had from the small photograph on this page, made about noon of the second day of the fair in the automobile parking place within the grounds. There were literally acres of automobiles and the view shows only a limited section. The people came from all parts of the county and indeed from some other counties. In proof of this was the attractive booth which came from nearly 700 miles away when little Glenn County in the far north sent down an exhibit of almonds and other of her products. This exhibit held the record for distance covered in coming to the fair. It was well worth it and was in addition a valuable exhibit for the almond—and other—growers of Southern California. The industry in the southern end of the state is not so

far advanced as in the north and Mr. Bane, the almond grower who came with the exhibit, was qualified to answer many questions.

In the same building there were many community exhibits from other sections and be assured these were not all in the big "punkin" class but gave excellent examples of the worth of the products of the various communities. Most of the exhibits were in mammoth tents, though there have been constructed in the grounds purchased a year ago one large exhibit building and a grandstand. A good half mile track is also a feature and the grandstand caught the greater part of the crowd during the afternoon races. The one large permanent building already constructed has been given to household arts display. This is similar to the exhibit place in what was known, in the time of the good old country fair, as "Floral Hall." In this building there were pillows, and bags, crazy quilts and all kinds of needlework, together with cookies, cakes, jams and jellies, pickles and preserves.

The animal industry exhibit was not large. There were, however, some remarkably fine animals shown. There were exhibits of Percherons by Stalder Brothers, R. F. Slaughter, F. L. Hall, A. H. Filton and Fontana Land Company; a good snowing of Shorthorns by F. L. Hall; Holsteins by J. S. Bird

and Company, Stalder Brothers, J. F. Jamner and Son, F. L. Hall; Jerseys by W. H. Rough; Guernseys by C. W. Main and George W. Thomas; Berkshires by F. L. Hall and Thatcher, Ennis and Williamson; Poland Chinas, W. H. Rough, A. N. Knell, Fontana Land Company, Charles R. Hanna, Stalder Brothers; O.I.C. hogs, Southern California Swine Company; Hampshires, J. M. Shrader.

Considering the season of the year the poultry exhibits were fine. The largest representation was by White Leghorns. A surprise to many who were not keeping in close touch with the industry was given in the large number of exhibits of fine Anconas. Perhaps the next most popular classes were the White Wyandottes and Reds. Rocks and others followed closely and made a fine showing.

Another surprise was occasioned by the large exhibit of rabbits. There were Flemish Giants, New Zealanders, Angoras and all kinds of Belgians. Judge Moore, who handled this class and the pigeons, said that both these departments made a remarkably fine showing. In fact, Riverside is noted for bringing out large exhibits of rabbits.

Next to the races, diving girls and other track features, the most popular section was the side show vaudeville attractions. "Side Show Alley" surely did carry one back to barefoot days when the circus came to town.

Some who attended both last year's fair and this one maintained that the number of exhibits was hardly as liberal this year as last, but quality of exhibits and all considered it was a fine county fair. May Riverside give us many more.




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At great expense we are seeking to place a Karo Aluminum Griddle in the homes of all Karo users, so that Karo—the famous spread for griddle cakes and waffles—may be served on the most deliciously baked cakes that can be made.

Karo the Syrup Choice on Thousands of Farm Tables

THE woman who keeps the syrup pitcher filled knows better than anyone else how strong the men of her household are for Karo on the griddle cakes, hot biscuits, bread and waffles.

She may not know how many thousand cans of Karo are used in her home state, but she does know how often her own Karo pitcher is emptied. The forehanded housewife buys Karo by the dozen and keeps it in the pantry ready for the daily filling of the syrup pitcher.

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Little Stories of Success

No. 9

Mr. Fred Rollins of Chico, who bought a Caterpillar "60" in March, 1914—and incidentally cleaned up \$1700 the first month he owned it, plowing night and day for his neighbors—dropped in the other day to tell us his story of success.

Much of Mr. Rollins' work with the Caterpillar has been stationary work, and for this he says the Caterpillar has them all beat. In the rice fields, where a separator sinks in mud up to the sills, Mr. Rollins can go with the Caterpillar, and be ready to run right away without stopping to build up any foundation or blocking for the tractor. He threshed a rice crop for one neighbor, where a short time before when this same crop was harvested, the binders had to be pulled through the fields on sleds.

Mr. Rollins is convinced that the right motto in buying a tractor is "Quality First." What's your problem? Write us.

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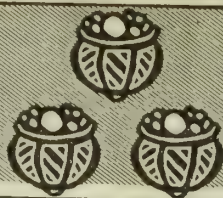
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Small Fruits

Vegetables



THE FALL VEGETABLE GARDEN IN THE SACRAMENTO VALLEY

Written for California Cultivator
By S. S. Rogers.



IT IS very important in locating the fall vegetable garden that the soil should be of such a character that it will drain readily, especially in sections of the valley in which the rainfall is heavy. The most suitable soil for this purpose is of a lighter, more open character than when growing the late spring and summer crops. Where practical a southern slope should be chosen in order that the soil may be warm as possible.

Fields which are to be planted during the next two months should in many cases be irrigated before planting in order to start the seed and young plants. The ground should be plowed from ten to 14 inches deep in order that it may be well loosened, which will aid greatly in conserving the moisture and preventing packing. After plowing it should be worked into a fine condition of tilth as soon as possible, for if allowed to remain rough the ground will soon dry to such an extent that a good seed bed is impossible. Where the soil is heavy, and especially if the drainage is inadequate, the seed and plants should be sown or transplanted in raised beds. These are made by making ridges through the field from four to eight inches high and from ten to 18 inches in width. The spaces between these beds will aid greatly in carrying away the surplus water, and the soil on these ridges will warm much more quickly and keep from packing much more readily than if the ordinary flat cultivation is used. If the land is level, drainage ditches should connect these furrows in order that the water may be carried off the field. If irrigation is necessary the water may be run in these furrows between the beds, seeping into the ground underneath and allowing the surface to remain dry. It is well to have these beds prepared a week or ten days before planting so that the soil may settle.

Choice of Crops

In choosing crops which are to be planted at this season of the year, only those which are partially resistant to frost should be used. It is well also to consider the demands of the market, the character of the soil, water supply and the capital and labor which is at the disposal of the grower. Many failures are due to planting crops which find no demand in the markets and which require more capital and labor than the grower is able to supply. The extent of the garden is also dependent largely upon these last two factors and too commonly the grower plants more truck than he is able to look after in a thorough manner. As the most advantageous crops to grow are dependent largely upon the local conditions the grower should choose from the following list only those which seem to meet his requirements the best.

Beets

Of the many varieties of garden beets which are offered by seedsmen,

Crimson Globe and Crosby's Egyptian will be found the most satisfactory. The Egyptian Blood Turnip is also a favorite variety, especially for the home garden, although not used as extensively as the former two by the truck gardeners.

Beets may either be planted in drills or broadcasted. Where the raised beds are used the latter method is preferable. The seed should be covered with from one half to one inch of soil. Plants which are planted during October will be ready to use from December until February inclusive.

Cabbage

The best varieties of cabbage for the fall garden in the Sacramento Valley are Early Winningstadt, Early Flat Dutch and Early York.

The plants should be set at a distance of two and one-half feet on ridges which are from two and one-half to three and one-half feet apart. These should be planted as early in October as possible for it is important that the plants become well established before the cold weather sets in. Cabbage which is set during October will be ready to harvest from February to May, inclusive.

Carrots

The principal varieties of carrots are the Danvers Half Long, Improved Long Orange and Early French Forcing; the last being especially popular for the home garden and the former two the common varieties grown for commercial purposes.

Carrots may be grown either in drills or upon raised beds, the latter method being especially popular for the winter garden. The seed should be covered with from one-half to three-quarters of an inch of soil. By sowing during October the carrots should be ready for harvesting from March until June, inclusive.

Cauliflower

The principal varieties of cauliflower for the fall garden are Snowball, Early Paris and Broccoli. The plants should be set in the field immediately, planting them similar to the cabbage. Cauliflower which is set in the field immediately should be ready to harvest during February and March. It is rather late in the season to sow seed for this vegetable.

Celery

Although it is a little late in the season to plant out celery, if it is desired to do this, the Green Top variety should be used. This may be planted either in rows two and one-half to three and one-half feet apart or in sunken beds, putting the plants at a distance of one foot apart. The latter method is especially popular with the Italian truck gardeners. Celery which is planted at this time should be ready to harvest during March and April, at which time there is generally a good demand for this vegetable.

Lettuce

The principal variety of lettuce used throughout the Sacramento Valley is the Los Angeles or New York. The plants may be set immediately in the field, although it is not too late to sow the seed. The lettuce should

always be grown on raised beds, setting the plants from 15 to 18 inches apart and having the tops of the ridges the same width so that two rows may be grown on each bed. If the plants are set in the field immediately they will be ready to harvest from the latter part of November until February. If seed is sown the plants will not be ready to harvest until spring.

Mustard

Mustard for greens may be planted immediately upon raised beds using the Black and Southern Giant Curled varieties, the latter being especially popular. If the seed is sown immediately the crop will be ready to harvest during the early spring.

Onions

The leading varieties of onions for the Sacramento Valley are the California Red, Italian Red, Yellow Globe Danvers and Australian Brown. The former is used chiefly for the early spring crop, but as it is not a good keeper it should be disposed of immediately after harvesting. For storage the Yellow Globe Danvers and Australian Brown varieties will be found very satisfactory. If the plants are to be transplanted the seed should be sown immediately in seed beds so that the plants will be ready to transplant to the field during November and December. If the seed is to be sown directly in the field this may be done during November and December. If the California Red variety is used, the onions should be ready for harvesting during February and March, provided the plants are set in the field during November. The other varieties mature more slowly so that they will be ready for harvesting from March to July, inclusive. When early green onions are desired, sets or matured onions should be planted during October and November. Under ordinary conditions onions will do better under flat cultivation than when raised beds are used.

Peas

The most common varieties of peas are the Stratagem, Telephone, American Wonder and Premium Gem. The Telephone is the most popular variety when producing this crop for the mar-

ket, but for the home garden the American Wonder and Premium Gem will be found equally as desirable. Peas should be planted for the early spring crop during November, generally after the first heavy rainfall. They may either be planted in drills or in hills, and it will be found more satisfactory to use the raised beds, especially where the drainage is rather poor. By planting in November the growers will be able to commence harvesting from the latter part of February.

Radishes

The most popular varieties of radishes are the French Breakfast or White Tip, Scarlet Turnip and Long Red. These may be planted at any time during the fall, and it is a general custom to plant the seed along with such seeds as beets and carrots, for this crop matures so quickly that it is out of the way before the other crops need the land.

Spinach

The most popular varieties of spinach are the New Zealand and Prickly or Fall, the latter being especially adapted to planting this time of the year. This vegetable may be grown either in the raised beds or under flat cultivation and by planting immediately the crop will be ready to harvest from December on.

Turnips

The most popular varieties of turnips are the Purple Top Globe and Purple Top Strap Leaf. Seeds of this vegetable may be planted at any time during the fall in the garden, and are generally grown on raised beds. The crop should be ready to harvest from two to four months after planting.

Aside from the planting calendar, which is given above, the fields which are to be planted during the spring should receive a coating of stable manure varying from ten to 30 tons per acre, and after the first rains this should be plowed under to a depth of at least ten inches. The field may be left in this roughened condition until a short time before planting, or may be worked down immediately. Where the soil is of a heavy nature, the former method will oftentimes prove more satisfactory.

roses, and I had to confess that I was nearly "on the fence" so far as the actual value of budded or own-root roses is concerned but liked to think as well as to know that my garden plants were all as natural as possible and therefore would have upon their own roots all sorts that would do equally as well as if budded on other stock.

But there is another reason that may best be illustrated through use of the graft. All grafted plants, no matter what kind, have a structural weakness in that only the cambium layers unite; the heart wood never does. How then may we have as strong plants as when all substance is one and continuous? This weakness is the cause of many grafted plants breaking off at the point of union. In budding roses a majority of the buds take well, making a union as nearly perfect as is possible, but not all do so, and among a great number some will be found that will always remain weakly and unsatisfactory. After having 135 rose bushes in my garden for ten years and tending them myself I am in a position to speak authoritatively. Some sorts do not unite well with the stock used. Thus in ten Cochets three were never good, three others were fair, and of the remaining four, one was far ahead of the others. Why were not all equally good? Of course individualism enters somewhat for not all would have been of the same vigor had they been own-root roses, but the percentage of good ones would have been greater. Where union is good budded roses are long-lived, but in a large collection a few will drop out every year and at the end of ten years few will prove highly satisfactory. I believe in removal of the weakly ones and replacement just as soon as insufficiency of vigor or deterioration is noted. There is no question in my mind but own-root roses have a much longer life of usefulness than budded roses. On the other hand, there are some fine colors and forms so weakly upon their own roots as to be unworthy of garden space. If we want them they must be budded, but really, we do not have to grow them, for there are enough good sorts suitable for any specific soil so that we need not coddle weaklings. For budded roses it may be said they grow faster and bloom more freely, but for the first few years only.

Dahlia Season

Dahlias are now in bloom everywhere and one may choose and note down what sorts he will grow next year. The flowers range in color from white to nearly black with all intermediates except blues. The size of flower in the dwarf pompoms and singles is often but an inch across, and from this to nearly ten inches in

the larger types is surely a sufficient range to please all. The plants are as low as 18 inches and others run up to six feet. This variety in size, color, etc., makes the dahlia suitable for all parts of the garden wheresoever one chooses to grow them. When used as cut flowers it is best to cut them in the morning while yet it is cool and put the stems in water as quickly as possible. Some growers carry a vessel into the garden and place the flowers in water within the same minute in which they are picked.

Our Best Conifer

After more than a quarter century of study and close observation I am convinced that Cedrus deodara is the most beautiful conifer we grow. For the same length of time I have carefully read every book on any phase of gardening that I could by any means procure. The most satisfying of the latter is Dr. Miller's "What England Can Teach Us About Gardening," costing \$4. But in this book there is an illustration of an Indian cedar carrying an underline which says: "A Deodar, showing the harsh, larch-like texture of young cedars." Yet the subject is to my thinking the handsomest conifer shown in this splendid book. The popularity of this tree in California has grown until now it is planted everywhere. Are we overdoing it? I think not. Plant them freely.

Prize-Winning School Grounds

The awards of the 1915 Beautifying Committee to high schools in Class No. 1, were: Inglewood, first (\$400); Covina, second, (\$200); Venice, third, (\$100); and Montebello, fourth, (\$75). All these were planned by Ernest Branton. A full set of plans and specifications were furnished the first, second and fourth; and the third was advised how best to compete, during a visit to the grounds.

Among the other prize winners Ernest Branton was official adviser to the following: Santa Monica High School; Grant and Garfield Schools, Santa Monica; Central School, Redondo Beach; Central School, Venice; Lawndale; and Zelzah.

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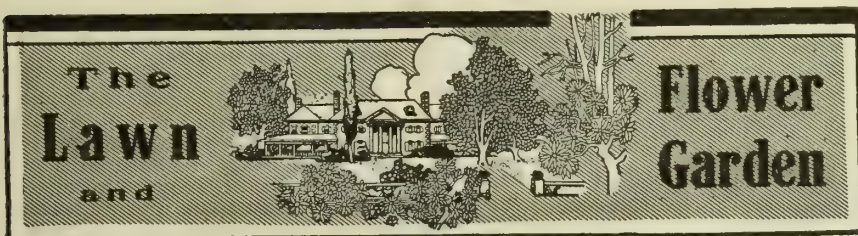
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RURAL GARDENING

Written for California Cultivator

By Ernest Branton

It has been said that there is no distinction in California between the styles of gardening in the city and those in vogue in the country, but the statement is not wholly true. Fine country homes have gardeners to care for them, but how about the man who cares for his own little orchard, as well as his home grounds? It cannot be that with acreage to look after he may give the same attention to the flower garden possible to a city wage-earner who is released from his duties at five o'clock each day and who often has Saturday afternoons for pleasure as well.

There are so many similar cases that might be cited in support of our argument for a rural style of gardening that we will assume the governing rules are not the same. Then comes the question: Wherein shall they differ? As a rule bedding and herbaceous plants, known to the trade as "soft stuff", need almost daily attention, but rural gardens should have a minimum of such material and choose that minimum from plants requiring little attention. The California poppy and flowering plants of this class are urged for making bright incidentals in the landscape and also for cutting for house use. For the next step upward what can surpass geraniums for effect under harsh conditions? The ruralite may also have plenty of lawn, for were I in the country I should seriously con-

sider lawn-fed mutton as a meat diet, for sheep are the best lawn mowers and with an automatic sprinkling system we have an economic combination without a peer.

The city man has little space about his cottage for trees, but in the country there is, as a rule, space enough, and in some cases land to the rear or side that is fit for little else than a natural garden of trees and shrubs—ground that is rough, or stony, or having a barranca, canyon, or some kind of a wash running through it. Oh that city tract owners would not so "sleek up" their land that it looks as though it were the bed of the Salton Sea? When finished and ready for the sale of lots there must not appear a depression the size of a dinner plate or a lump or prominence as large as an apple dumpling. But last week a suburbanite said "When can you come out to look at my place and advise me? I have a nasty ravine running through my grounds and I don't know how to get rid of it." Poor mortal, I heartily wish I had one in my own grounds—to make use of. How else may we get a natural water garden, shady banks fern-covered, sunny banks for rock gardens, etc.? Often in the city I have to make these features in order to get a pleasing variety in the grounds, for city gardens are often monotonous—such a sameness everywhere. When we get down to right rural gardening our country will be beautiful.

Why Budded Roses?

A prominent rose grower asked me last week why I did not like budded

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Mr. Mitting, an expert horticulturist, says: "I would rather plant out two plants of roses two years old than twelve small rose plants from two inch pots."

We offer the following roses, all summer bloomers, at special prices: Kaiserin Augusta Victoria, white, 30c; Madame Caroline Testout, pink, 35c; Ulrich Brunner, red, thornless, 50c; Killarney, pink, 35c; Madame Ravary, yellow, 25c; Mrs. Aaron Ward, Indian yellow, copper and gold, new, 50c; Duchess of Albany, red, 35c; Frau Karl Druschki, white, 40c; Perle Von Godesburg, lemon yellow, 30c; La France, 25c; Antoine Revire, pink, tinted with yellow, 40c; La Detroit, pink, shading to soft rose, 40c.

The above twelve beautiful roses, two years old, three feet high, bushy, with heavy roots, sent by express PREPAID, for \$3.00.

Climbing Roses

American Pillow, pink, single flowers, 4 inches across, 30c; American Beauty, pink, 30c; Madame Caroline Testout, pink, 40c; Meteor, red, 25c; My Maryland, glowing pink, 40c; Hiawatha, Hybrid Wichuriana, 35c.

The above six climbing roses, three feet high, heavy bushes, with heavy roots, sent prepaid for only \$1.50.

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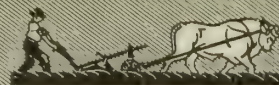
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General Agriculture



FARMERS' ROADS

TO BUILD and maintain good roads for the benefit or pleasure of non-resident users is a proposition the farmer doesn't relish. Can he escape this burden and still have good roads?

If the experience of the taxpayers of Illinois is of any value there is a way out of the difficulty. According to statements made by Governor Dunne, in an address before the Chicago Association of Commerce, a road policy has been adopted in Illinois

tax, taking the average, will be only eight cents per acre per year until the bonds mature, which will be at the expiration of about 20 years.

If the estimates of the highway commission are correct in so far as they affect the farmer, a man owning 100 acres of land would pay only eight dollars per year for an improvement worth many times that sum. Instead of being a tax, hard roads of the type Illinois proposes to build will be of direct and immediate pecuniary profit to the farmer taxpayer. They are not an expenditure any more than is the money he puts into seed grain, or a herd of cattle from which he obtains profit. As a matter of fact, the pecuniary return to the farmer through sav-



An Indestructible Concrete Road in New York State. This Type of Highway Means Minimum Maintenance Charges.

which discloses an extremely interesting situation.

It is the purpose of the Illinois Highway Commission to build all leading highways of the most durable materials it is possible to obtain in order that the maintenance factor may be eliminated. To improve the leading roads of the state will require, it is estimated, an expenditure of approximately \$200,000,000. Of the roads not improved by the state none will be more than 4 1/2 miles from one of these state-aid roads. At first glance this would seem to be prohibitive in

ing of time, cost of transportation and the losses incident to bad roads would be more immediate than in the case of a field of grain. Furthermore, the corporations and municipalities of the state will contribute at least 60 per cent of the money invested in the improved system of roads.

Turning to the state of New York, it is said that the farming sections pay only 15 per cent of the cost of the extended system of highway improvement now being made through state aid. A New York farmer, who complained at a public meeting against "being ground to death by highway taxes," admitted that an improved road in his locality had brought him



A Concrete Road in the Illinois River Bottom. Floods Ruined All Previous Roads.

cost, so far as the farmer is concerned. It has developed upon inquiry, however, that the greater part of construction cost, as well as maintenance, will fall upon corporations and municipalities, and that the farmer's share of the

an offer of \$500 more than he had previously considered his property to be worth. He owned a farm assessed at \$3,000. He was very frank to state that the increased value of \$500 was due entirely to this road. The increase in the value of his farm was sufficient to pay his share of the highway ex-

pense for 150 years. The interest on it at six per cent for 12 years would pay his proportion of the 50 years bond period. His individual burden amounted to less than one cent a day and would not go over that figure when the highway system is entirely completed. It is needless to say that the farmer in question was surprised and immediately revised his opinion as to the cost and value of permanent roads.

As stated, the Illinois project has to do with main or leading highways only, but it is interesting nevertheless to compare with this the situation in other states as it applies to road tax in general. For example, in one of the leading agricultural counties of Pennsylvania, the county of Bucks, road tax as levied by the townships runs from four to ten mills on each dollar of assessed valuation, depending upon the extent of highway improvement. A fair average would be six mills. Thus a farmer owning 100 acres of land assessed at \$100 per acre would pay \$60 road tax each year. A great majority of the highways are of the most ordinary type, many of them almost impassable at certain seasons of the year. In contrast to this the Illinois farmer will always be in touch with a fine system of durable highways, for the construction of which his contribution of eight cents per acre will be a mere pittance.

The average cost of concrete roads 16 feet wide, taking the country over, has been \$12,000 per mile. In some states, notably in Maryland, Mississippi and Minnesota, narrow concrete roads have been built for about \$7,000 per mile.

In brief, many of these farms, in so far as easy access to the city is concerned, have become suburban properties. The average maintenance on concrete roads 16 feet wide has been less than \$30 per mile per year, and in the case of a concrete road built in Bellefontaine, Ohio, more than 20 years ago, a road subject to constant use since that time, the average repair charges have been less than \$25 per mile per year. In the state of Connecticut there is a stretch of concrete road four and a half miles long known as the Milford turnpike. After a year of hard usage it was inspected by engineering experts, who stated that throughout its entire length the road was flawless with the exception of a small hair crack in a single slab.

A GOOD BOOSTER

The California Development Board, which is really a state chamber of commerce, extends invitation to all visitors at San Francisco to visit their exhibit which is maintained year in and year out in the Ferry building. In this exhibit there are over 5000 glass stands, containing exhibits of 37 of California's counties. The California Development Board is to the whole state of California what a live chamber of commerce is to a city. Its purpose is to exploit in a conservative, trustworthy way the resources of the state and to cooperate with civic and commercial organizations and county governments for local and state development. It is also a clearing house for their data and activities.

A CALIFORNIA RICE GROWERS' ASSOCIATION

Editorial Correspondence.

A movement has been started for the promotion of a California Rice Growers' Association.

Rice growing is a comparatively new industry in California but it has become one of great importance, and the growers of this crop, in common with all other producers, are confronted with the problem of how best to handle and market the crop.

The markets of this country are not such that an immense crop of any commodity can be sold and absorbed in a short time after harvest except at heavy loss to the producer. There are not physical facilities for handling the crop, and if there were there would be an economic loss if these should be compelled to remain idle for a large part of the year.

Those in close touch with the rice situation contend that the growers must eventually mill and market their crop and must make arrangements that will permit them to hold a part

of the crop from one harvest season to the next. Warehouses must be provided, and there must be some way to help the grower who is short of money and must realize on his crop as soon as it is harvested.

The Cultivator suggests to those among its readers who are interested in the rice business that the success of the proposition depends upon selecting officers and directors who are not only honest and interested in the future of the industry in a broad way but have a knowledge of the successful conduct of big business affairs.

GARAGE BUMPER SAVES FENDERS

Ever notice the bumpers at the end of a railroad siding? They stop the freight cars when the locomotive gets too ambitious.

Such a device in your garage, barn, or automobile shed will save your fenders and lamps, if you fail to stop quickly enough.

Cut two pieces of inch boards about five inches wide and two feet wide and two feet long, and saw the ends on 45 degree angles.

Nail each securely to an upright scantling as supports for a stout board about eight feet long. Fasten the board so that the lower edge is on the floor or slightly higher.

The tires will strike this board, and either the engine will stop or the car start to climb the board, lifting the fenders and lamps clear of the wall.

A still better plan is to attach a regular bumper to the frame of the car. In case of collision, the springs of the bumper frame help absorb the shock, and the bumper protects the front of the car.—Vertical Farming.

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34x4	19.90	22.30	3.90	4.40
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36x4 1/2	28.70	32.15	5.00	5.65
37x5	35.55	39.80	5.95	6.70

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A Journal of Horticulture and Agriculture

By

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Thursday, Oct. 14, 1915

OUR ADVERTISERS RELIABLE

We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

APPLE DAY

October 19 is National Apple Day. Rosie Apple, together with Miss R. I. Greening and her Maiden's Blush, Rome Beauty, and many other Pippins and Belles and Duchesses with occasional Jonathans, Alexanders and others will be given due honors.

Now all together: "An Apple a Day Keeps the Doctor Away."

BARLEY

California is the greatest barley producing state in the Union, producing more than one-sixth the entire total of the United States. The October first estimate was that our season's output would be 39,400,000 bushels. This is somewhat under the production of last year, which was 42,060,000 bushels.

LEADING TO COLLEGE

An Eastern paper has remarked that while it is possible for the farmer to lead his son to college, he cannot always make him think; the youngsters are sometimes inclined to consider college a playground. One Eastern educational institution which had trouble with too much joy riding has made a formal ruling forbidding any attendant at that college to keep or use an automobile. Many a family has been deprived of comforts for the sake of sending a boy to college, and this abuse of the great privilege given to him will some day be regretted. The best we can do is perhaps to continue to offer the opportunity in the hope that the youngster may awaken to the chance before him.

AVOCADO GROWERS

The California Avacate Growers' Association will discuss matters of interest to all growers of the avocado in the assembly room of the Hotel Alexandria at Los Angeles, October 23. There will be an all day ses-

sion and addresses will be made by some of the best informed specialists in this line in California. A general invitation is extended.

MORE CALIFORNIA CORN

The last government crop report issued states that California's output of corn will be about 2,440,000 bushels. This is against the 2,160,000 bushels produced last year. At a considerably higher price it indicates more prosperity amongst our corn growers. We hope the time is not far distant when another cipher will be added to the string of figures representing our corn output.

DIVERSIFY

The Texas state department of agriculture is appealing to its cotton and other farm specialists to compel continual prosperity by greater diversification. This matter of specializing too often leads to failure rather than success. Even our orchardists who have not only specialized on fruit, but one particular variety of fruit, are now seeing the promise of greater success in the small dairy connected with the orchard. It is possible the youngsters of California might be given some of the pleasure of the boys of long ago when they took out a couple of lusty yearling steers and "broke them in" to

people of Visalia, at which point the convention will be held, joining in making the arrangements, but representative fruit growers from Porterville, Exeter, Dinuba, Lindsay and Ducor, have joined in local organizations for the purpose of completing plans. The committee of farmers consists of W. P. Bartlett, Porterville; C. F. Collins, Visalia; A. C. Merryman, Exeter; Thos. Jacobs, Visalia; W. E. Sprott, Porterville; J. K. Tuttle, Visalia; Frank Daybell, Ducor; C. K. Towt, Lindsay; C. B. Earhart, Dinuba, and E. Barris, Dinuba. Miss Lillian D. Clark of the University of California will conduct women's sessions in connection with the convention. The date of the convention is November 18-20. Also, preceding the convention there will be held sessions of the state association of the county horticultural commissioners. One of the principal features of the convention will be the consideration of marketing; to this question an entire day will be devoted.

LARGE PRICES

The account of the Sacramento sale of Holstein-Friesian cattle in this issue of the Cultivator will be an eye-opener to the typical old-time farmer. He will naturally ask, "Why should a stock breeder pay \$2500 for a six-months-old bull or \$1500 or \$1600 for

YOU ARE REALLY MEMBERS OF OUR FIRM.

And we want you interested in every department of this paper.

If you have any question to ask the editor or any criticism of any kind, don't hesitate to write.

We want your subscription and we want you to try and interest your friends and neighbors so that they will help us too. The more regular readers we have, the easier it is for us to get advertising, and no farm paper can live without a good volume of advertising.

When you buy merchandise of any kind we ask that you try to patronize the business men who give us their advertising. They are all first class, reliable and square dealing in every respect. The more trade they get from readers of the California Cultivator, the more they will pay us for advertising, and every dollar we get from this source is one dollar more to spend for better editorials, better pictures, better type, better printing and a better paper in every respect.

Don't fail to tell the advertiser you are a reader of the California Cultivator. This may seem unnecessary to you, but, oh! how it helps us.

do some of the farm work. The exercise given to the youngsters was excellent for their bringing-up and did not in any way lower the quality of the beef.

ERADICATION

It is often claimed that insects or pests once fully established are never eradicated. As a bit of encouragement we would like to call attention to the fact that the federal department of agriculture has taken hold of the Texas fever tick and now millions of acres which were formerly under quarantine in this state and many Southern states have been released because most careful inspection failed to discover any infestation whatever. The foot and mouth disease may also be referred to. We would not say that this is entirely eradicated. We believe it will be so far as this country is concerned, though it is possible it may at any time be reintroduced. Let us all observe the greatest care and extend every aid to those whose duty it is to quarantine or give treatment for these pests.

FRUIT GROWERS' CONVENTION

Dr. Cook writes that arrangements for the coming forty-seventh state fruit growers' convention are progressing and that not only are the

a very ordinary looking cow?" And well may he ask it, for these are large sums of money. But we note that the class of people paying these large sums are not sporting people; as a rule they are hard-headed business men and are making an investment which they expect will return big interest. Not one of these purchasers is maintaining "a boarder" in his herd, but they are demanding of every individual in their herds far more than their upkeep, and the only way to secure these wealth producing animals is to secure the blood which flows in the veins of large producers.

As an example of the wisdom of paying a long price for a single animal, we may give the instance of one of the older bulls sold at this sale, which was purchased some years ago for \$1500. At that time he was young and untried. The farm had his services for many years; he added many valuable animals, some of which sold for long prices, and was profitable in every way. At the time of this sale he commanded \$500 more than he brought as a youngster. An indifferent or unprofitable animal would have been a drag during all these years and in addition would have brought nothing from intelligent buyers. Our dairymen must understand the value of good blood.

Agricultural Notes

The Egyptian cotton crop is proving satisfactory.

There is a shortage in the honey crop of England this season.

The hop crop of Bohemia now shows a 50 per cent decrease over last year's.

One thousand counties in 48 states of the Union now have farm advisers.

No molasses can be exported from the Netherlands according to government decree.

The National Poultry, Butter and Egg Association convened in New York, October 4 and 8.

Austria has fixed the maximum price for raw sugar from the coming harvest at 2.85 cents per pound.

Citrus growers of Cuba have had a poor season, prices being very low. Last season their crop was large and prices excellent.

The Satsuma orange is having a boom among growers of Alabama and Mississippi, and large districts have been planted to this fruit.

The United States geological survey has informed the bureau of foreign and domestic commerce that the manufacture of porcelain doll heads has been established in Philadelphia.

Farmers' meetings in the Bermudas are giving special attention to quality of seed potatoes. They have been investigating methods followed by successful growers in Maine and Long Island.

The number of ocean-going vessels passing through the Panama Canal during July was 170, about 65 per cent greater than the average for the preceding months. The tolls collected amounted to \$573,366.

Walnuts from France will be ready to go forward to the United States early in October, as the season is in advance this year by at least 15 days. The voyage to New York via Marseille takes about 17 days.

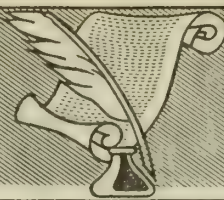
The Mexican state of Guanajuato has a new trade body in the recently organized national chamber of commerce of Leon. The new chamber plans to have correspondents in every important district in the state.

Florida's orange crop is showing up about ten per cent short of last season's and from ten days to two weeks later in maturity. Unusual activity is manifested in building and overhauling packing houses to make ready for the shipping season.

A partitioned barrel has been patented by a British Columbia fruit man. An ordinary barrel is divided into two equal parts by two partitions so adjusted as to permit the barrel being sawed in two in case a purchaser wishes only half a barrel of apples.

Florida citrus growers are seriously alarmed over the citrus canker situation. Dade county growers are asking that the federal government furnish the money and take charge of the fight against citrus canker in the citrus fruit growing states. It is suggested that \$2,000,000 will be required to insure the eradication of the canker disease. The growers contend that the agricultural department of the federal government took up the fight against the foot and mouth disease in cattle, which broke out in the North last summer and they say that there is just as much reason why it should take up the fight against citrus canker. The state has already expended \$125,000 in the fight.

Agricultural News Notes



of the Pacific Coast

Northern California

A fruit festival will be held at Paradise, Butte County, on Saturday, October 16.

One thousand acres will be planted to rice next season by Eugene Rutherford of Gridley, Butte County.

Home economics demonstrations will be given in Placer County this month by Miss Clark of the state university.

The first special train to carry onions exclusively from Sacramento to the East left Sacramento on October 1. The train was made up of 20 carloads.

Butte County rice growers are searching for an early maturing variety of rice that will escape the fall rains and at the same time yield heavily.

Seven steam tractors are plowing on the great Moreing Ranch in the Natomas district. Practically all of the 25,000 acres in the ranch will be sown to grain.

The Solano County board of supervisors has passed an ordinance regulating the vaccination of hogs against cholera and providing for a quarantine of diseased animals.

Improvements are being made on the roads between Gridley and rice growing sections of Colusa County preparatory to the rice hauling season which will start within a few weeks.

A band of 300 mules, purchased at Lakeview, Oregon, was driven to Red Bluff, Shasta County, for shipment to San Francisco. They were ten days making the journey from Lakeview. They are on their way to Europe.

The California Almond Growers' Exchange has fixed prices as follows: Nonpareil, 14½c; IXL, 13c; Ne Plus, 12c; Drakes, 10½c. Since these varieties represent the major portion of the crop other varieties produced in limited quantities will be sold according to relative values.

At the recent annual meeting of the California Almond Growers' Exchange George W. Pierce of Davis was elected president, A. S. Lasell of Lodi, vice president, and J. B. Wrangham of Antioch, secretary. The exchange during the year lost three members and gained 281. The total membership is now 908.

The high school agricultural clubs of Glenn County are this year engaged in a corn contest. Crops raised by the clubs are about ready for harvest. An incident in the contest includes a display of products selected by the boys as being, in their judgment, most perfect. At both Willows and Orland displays have been made in store windows.

Modoc, Siskiyou, Lassen, Shasta and Trinity Counties have perfected an organization known as the Northern California Counties' Association. The headquarters of the association will be at Redding, Shasta County. D. V. Saeltzer of Redding has been elected president and R. J. Anderson, secretary. Each of the five counties will be represented by a vice-president.

Central California

Fresno Day at the district fair was celebrated by over 15,000 people.

The California Fruit Growers' Convention will assemble in Visalia, November 18-20.

Many Dinuba growers are subscribers in the new Peach Growers' Company.

Many farmers in the Oakdale district of Stanislaus County are planning to put in rice next year.

Orchardists of Hollister, San Benito County, are making large purchases of fruit trees for winter planting.

Cantaloupe shipments from Turlock this season have totaled about 1400 cars, against 519 cars in 1914.

Porterville will hold a chrysanthemum show Wednesday and Thursday, November 10-11, at the pavilion.

The prune crop of Tulare County is practically all gathered. Prices received range from \$22.50 to \$29.00.

The federal government has two experts in Watsonville investigating causes of browning of apples in cold storage.

The California Associated Raisin Company has issued its new schedule of prices becoming effective on September 28.

The Porterville chamber of commerce is laying plans for the chrysanthemum show which will be held November 10-11.

The executive committee of the newly organized California Peach Growers' Company reports subscriptions already received totaling \$100,000.

Beginning September 30 and lasting until December 3 there will be a succession of live stock shows on the grounds of the exposition at San Francisco.

Light fines imposed for raisin stealing are resented by the California Associated Raisin Company's management, which considers jail sentences called for.

Members of the Tulare County Protective Association met at Lindsay last Saturday afternoon to discuss the activities of the association for the coming season.

The week beginning Monday, October 4, was prune week at the Panama-Pacific, and Santa Clara County passed out many packages of fruit to visitors at the California Building.

The Kern County Farm Bureau at its annual meeting on September 1 elected president, F. H. Hall, Bakersfield; vice president, C. H. Stiles, McFarland; secretary-treasurer, K. S. Knowlton, Bakersfield.

The Dickinson Ranch in Stanislaus County has been purchased by Robinson Brothers, cattlemen of Merced. This ranch will be combined with other property belonging to the buyers into a big Hereford pasture.

The Turlock melon season has practically come to a close. This season's shipments total about 1400 carloads. The prediction is made that between 3000 and 4000 acres will be planted to cantaloupes in this section next year.

Southern California

A new cotton compress has just been installed at Imperial.

The orange marmalade factory at Monrovia is almost completed.

Many sales of lima beans have been reported at Oxnard at \$4.12½ cents.

Fillmore, Ventura County, has the promise of a citrus by-products factory.

The Beaumont Fruit Growers' Association will double the size of its present packing house.

The lima bean growers of the Goleta district of Ventura County have formed an association.

The San Gabriel Valley Potato Growers' Association has shipped this year 500 carloads of its summer crop.

Members of the Santa Ana Valley Walnut Growers' Association report crops from a half more than to double last year's.

The Hemet-San Jacinto Valley Growers' Association has been formally incorporated, and it is thought a cooperative cannery is assured.

The Escondido Tomato Growers' Association has made several carload shipments of tomatoes to Denver. The cars are iced in San Bernardino.

Yucaipa Valley will hold its annual apple show November 4-6. Work on the roads into the valley it is expected will be finished before the opening date.

At the recent annual meeting of the Hemet Orange Growers' Association Manager Hamilton reported that the association had packed and shipped 24,852 boxes of oranges.

Residents of the Fairview farm district, southwest of Santa Ana in Orange County, held a booster products fair last Saturday. Cash prizes were given for best exhibits of farm products.

Work has begun on the 5000-foot levee which is to be built at a cost of \$8000 for the Talbert drainage district by the Newbert protection district in a line extending in a northerly direction along the coast from the west bank of the Santa Ana River.

A new lemon and orange peel cleaning machine has been installed at the Kingsbury by-products plant at Redlands. The machine cuts the fruit in half and scours out the juice and pulp, leaving the peel clean, to be packed in barrels, covered with brine and shipped to Chicago, where it is made into candied peel.

Several carloads of walnuts have been shipped from the association packing house in Santa Ana. They were of high quality but not quite up to the high standard of last year's crop. Sunburn during the last hot week of August did more damage than was thought at the time. There will be considerable reduction in the output of merchantable nuts on account of the rigid culling which growers and packers are obliged to practice. The association will take care of the culls of its members by shipping them to the walnut cracker in Los Angeles.

The Coast

The University of Arizona has a splendid new agricultural building.

Farmers' short courses will be given at the University of Arizona college of agriculture January 3-15.

Two thousand head of feeders have been secured in Minnesota to be fattened at Chandler, Arizona.

Large sales of Yavapai, Arizona, range cattle are now being made. The average price is six cents on foot.

The Northwest Shippers' Council, in connection with the growers, is working on a plan to stimulate demand for apples.

The forestry office at Provo, Utah, reports that recent rains in the mountain ranges have brought up good cattle and sheep pasture.

Montana held its 13th annual state fair at Helena September 20-25. An exceptionally large number of entries were made in the agricultural division.

The International Dry Farming Congress, held in Denver, closed on October 4, and the exposition held in connection with it will close on the 10th.

Hop growers near North Yakima, Washington, find this year's tonnage 4000 bales under early estimates. The total yield will not exceed 26,000 bales.

The Northwest Shippers' Council and the North Pacific Fruit Distributors have adjusted their differences and are planning to cooperate in constructive work.

On the 15th of this month the Southern Pacific puts into effect its new freight tariff between interior points in Oregon. The rates will be slightly higher than heretofore.

Estimates of this year's acreage of hops in the four principal hop growing states, California, Oregon, Washington and New York, show a slight net increase of seven-tenths per cent.

The Arizona Poultry Association held its regular monthly meeting at Phoenix October 9. At this meeting a plan was discussed for producing guaranteed eggs backed by the association.

Cattlemen in the vicinity of Roswell, New Mexico, met in that city on October 6 to work out plans for closer cooperation. They also decided to ask the federal government to lease more grazing land.

An egg rancher in the Chandler district of Arizona has developed a good market for eggs in the mining districts. He is now shipping daily to the mining camps eggs secured from nearby ranchers.

Five hundred acres of peat land were burned over near Valley, Washington, the last of September. Sufficient warning was given so that many stacks of hay and grain were removed from the path of the flames.

A meeting of the live stock board of the Western states was held in Kansas City, October 4, to consider the establishing of uniform quarantine measures against all Eastern states affected with the foot and mouth disease.

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Live Stock and Dairy



THE FOOT AND MOUTH DISEASE SITUATION

Written for California Cultivator

R EPORTS from the Middle West indicate that unless there is some new development the last outbreak of foot and mouth disease will soon be cleaned up. The last of the herds in the infected districts are being condemned, killed and burned, and it is to be hoped that the authorities have taken precautions that will prevent further spread of the disease. It seems to be agreed that the last outbreak came from the use of hog cholera serum, infected with foot and mouth disease germs, made at the Chicago stock yards after there was foot and mouth disease there, and the government authorities are being severely criticized for not having destroyed this serum.

In the handling of this and former foot and mouth disease outbreaks in this country the policy of the authorities has been to slaughter and destroy all of the animals in infected herds. Most of the animals so destroyed have been grades and scrubs, and for these there is provision in most states for appraisal and payment by the state and federal government on the basis of a fair market value.

But in the case of registered pure bred animals a stand has been taken by some states and by federal authorities that makes an outbreak in such a herd a severe tax on the unfortunate owner. For the animals appraised a maximum value of only \$300 per head is allowed. This is all right for a great many animals, but decidedly unfair when applied to superior individuals worth from \$300 to \$10,000, as many are now valued. In one state, New York, the owner has recourse to the courts where he may prove his actual damage and recover it.

The fact that many of the best dairy animals in the country were at the National Dairy Show in Chicago at the time of the outbreak and were quarantined and held for several months, many having the disease before they were allowed to be taken home and placed in further quarantine, has led to considerable discussion as to the wisdom of slaughtering all of the animals in infected pure bred herds. Some claim that germs remain concealed about the animal and at some later time reinfect it, causing another outbreak. This is the theory reported to be held by some European students of the situation. A close study has been made of the animals infected at the Dairy Show, and from these careful observations much valuable information on the subject will be recorded.

The California authorities have taken the stand that there is justification in a quarantine so rigid that there will be absolutely no danger of introducing the disease among our herds and flocks. Once established in our foothills and mountain ranges it would probably never be eradicated.

Just now pressure is being brought to bear in the interest of Eastern breeders who want to show cattle, sheep and hogs at the Panama-Pacific International Exposition. The claim is made that it is unfair to shut out herds from districts that have never been infected, as barring everything from east of the Missouri River would do.

There may be some adjustment of the differences between the California authorities and those desiring to make a show, that will be satisfactory to our friends and guests, the Eastern breeders, and will safeguard our live stock industry.

WESTERN NATIONAL DAIRY SHOW POSTPONED

At a meeting of the directors, held on September 6, it was determined to postpone the Western National Dairy Show for one year owing to the facts

that there is a great deal of uncertainty as to the danger from the spread of the foot and mouth disease, the general depressed condition of the industry and the fact that the machinery and dairy manufacturers have centered their entire 1915 appropriation at the San Francisco exposition.

The directors feel certain that the importance of the Western National Dairy Show will be brought home to every man engaged directly or indirectly in the industry, and the plans for a big 1916 show will go on. In the meantime it is up to you as an individual to take this matter up with people who ought to be interested and see that they cooperate, which they no doubt will, if the matter is called to their attention in the right way. The Western National Dairy Show will be incorporated, and plans will be continued for a larger show in 1916 than was contemplated this year.

MORRIS-McALISTER SALE

Continued from Page 363

bought a large number of the best and secured exceptionally good values.

Jas. McGillivray of Sacramento bought heavily of the best ones at good prices, as did Dr. D. M. Faris, Sacramento; W. F. Mitchell, Visalia; T. J. Gilkerson, Visalia, and Thos. J. Cox, of Sacramento.

The Bridgeford Company, breeders of gaited saddle horses and Holsteins at Knightson, bought several.

Among other Sacramento Valley buyers were J. H. Guili, Jr., Chico; W. T. McBride, Los Molinos; S. A. Mealy, Gridley; the McCloud River Lumber Company, J. H. Harlan Company, Woodland; I. G. Zumwalt, Colusa, and J. P. March, Woodland.

F. M. Helm, a prominent dairyman at Fresno, bought several, as did Frankenheimer Brothers, Frank Stark and Geo. F. Starin of Stockton and Ed Tomasi and W. F. Martinelli of Petaluma.

Other buyers were R. F. Fisher of Carlotta; J. H. Williams, Palo Alto; H. Hewins, Calistoga; W. F. Mitchell, Visalia; A. S. Knight, Vallejo; C. A. Miller, Ripon; F. E. Heath, Pleasanton; L. Mimi, Vallejo; Geo. Orr, Galt; Geo. Winters, Ione; Chas. Colquhoun, Mills; F. H. Bennett, Verona; D. W. Norman, Wheatland; E. F. Peterson, Hayward; S. G. Gambonino, Petaluma, Wm. Bishop of Chimaicum, Washington, bought some good ones; as did R. F. French for the Kamehameha Schools, Honolulu.

There were a number of buyers, like F. J. Kiesel, for instance, who are men of means and who fully realize the importance of good stock in California. There is a particularly bright future for breeders of this type because they have the business ability and money to make their undertakings a big success.

There was a big crowd in attendance, among them R. M. Hotaling and P. H. Davis, of San Anselmo; Gordon Hall, San Francisco; Manager Canon of Millbrae Dairy, San Francisco; W. H. Saylor, San Francisco; Geo. Smith, Corcoran, Mrs. C. J. Welch, Los Banos, and many others prominent in the dairy world.

The state fair officials provided every convenience for the sale and invite events of this kind for future dates. The cattle were housed in the cattle sheds and sold in the county exhibits building. Secretary Paine understands the importance of such sales and wants to see more of them.

It was a splendid setting for the sale and the weather was perfect.

The benefits conferred upon the dairy industry of California by some of the earlier breeders who had high ideals and discarded inferior individuals regardless of their breeding, men like R. M. Hotaling and P. H. Davis of San Anselmo, and Pierce of Stockton, is apparent in the many splendid animals of their breeding in present day herds in California.

The reluctance with which commer-

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Ideal Green Feed Silo

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cial bodies and the general public recognize great events like this sale was clearly brought out in a speech to the breeders at the close of the sale by a representative of the Sacramento chamber of commerce, who stated that this body did not know what the sale meant until it was nearly over, although it had been widely advertised, but that at another sale of this sort the breeders in attendance would be royally welcomed and entertained.

Another Cultivator representative, Mr. C. A. Briggs, adds the following:

Notes
Seventy-five thousand eight hundred and twenty-five dollars is the record total realized from the sale of 166 head of Holstein cattle, ranging from a few months old to mature age, at the Morris-McAlister sale on the state fair grounds at Sacramento on October 6 and 7. The average price also broke all sales records on the Pacific Coast, being \$459 per head for all ages. Three leading cows sold for \$4200, an average of \$1400, a Morris cow leading at \$1550. Five bulls went for \$8150, averaging \$1630. A 6-months-old bull topped the sale for \$2500.

Geo. A. Smith of Corcoran attended the Morris-McAlister first annual Holstein cattle sale at Sacramento on October 6 and 7.

T. L. Gilkerson, breeder of Holstein cattle, was in Sacramento on the 6th and 7th to attend the Morris-McAlister sale.

The Kamehameha Schools of Honolulu, represented by the head of their live stock department, J. D. French, purchased four cows and one bull at the Morris-McAlister sale. Mr. French will also ship to the islands a fine Berkshire boar.

Wm. Bishop of Chimacum, Washington, was one of the out-of-the-state buyers. He runs a large herd and has a creamery and cheese factory on his place.

Buyers for the Anita Baldwin ranch took south with them a full carload of 30 head.

Two thousand dollars was paid by H. E. Cornwell of Modesto for the former senior herd sire of the Morris herd, King Segis Pontiac Emperor.

Lorena Korndyke, a Morris bull of perfect type that has taken first prize at the California state fair for four consecutive years, was sold to McCloud River Lumber Company.

High prices at the sale are as follows: Bulls, \$2500, \$2000, \$1500, \$1150, \$1000; cows, \$1550, \$1500, \$1150.

Two of McAlister & Son's cows went over the thousand dollar mark; Winnie Korndyke Cornucopia De Kol, \$1500 and Uneeda Korndyke Abbie, \$1150, both being sold to T. S. Gibson of Williams.

Following is the list of purchasers with animals bought at this sale:

A. S. Knight. Segis Pontiac Modesto De Kol.

F. W. Kiesel. Molly Korndyke Hengerveld II, Genesto Netherland Walker, Jane Korndyke of Riverside, Helen Nye Skylark, Segis Tarde Maid, Sita De Kol Princess, Salo Pontiac Burke.

F. E. Heath. Newton Juliana, Mona Topsy Pontiac, Topsy Pontiac Homestead, De Kol Fidonna Homestead, Newton Juliana Starlight, King Korndyke Pontiac, Fidonna De Kol, Parthenia Korndyke De Kol II.

J. S. Gibson & Co. Geneseo Abberk Fobes, Segis Mead Salambo, Lady Alcartra Walker, Inka Tritomia Walker, Jane Netherland Segis, Netherland Walker, Empress Parthenia Pontiac, Lady Walker Segis, Tercei Netherland Burke De Kol, Uneeda Korndyke Abbie, Winnie Korndyke Cornucopia De Kol, Topsy Pauline II, Princess Niko, Mechthilde, Tercei Pauline Burke De Kol.

U. J. Martinelli. Segis Pontiac De Kol Burke IV.

Bridgeford Co. Lady Pontiac Fobes, Aggie Spring Brook, Josephine

De Kol of Cedarside, Louise of Riverside, Sarah Topsy De Kol.

Alex Whaley. Segis Pontiac De Kol Burke III.

T. J. Gilkerson. Aralia Pontiac De Kol Segis.

Homer Hewins. Careme Rachel Mechthilde, King Segis Pontiac Emperor IV, Silver Gloss Poplar II, Princess Leo Aaltje De Kol.

R. F. Fisher. Lady Riverside Ethel, Aggie Mechthilde III, Princess Zozo Peitertje II, Amy Veendam Pontiac, Sugar Queen Topsy.

C. M. Faris. Juliana Pet Homestead, Xatasso.

C. A. Miller. Lorena Korndyke Gerben.

L. Mimi. King Korndyke Pontiac Walhalla, King Kasteleintje II, Sir Korndyke Parthenia.

Mrs. Anita Baldwin. Aggie Lotta Pontiac, Velma Netherland of Cedarside, Miss Hengerveld Ormsby Burke, Isabella Crane of Lucerne III, Segis Pontiac Salambo, Josephine Creamelle Walker, Velma Lorena Korndyke, Edith Mandel De Kol II, Leda Josephine Korndyke De Kol, Anselmo Crane, Beets Wayne Korndyke, Ethel Riverside Pontiac, Empress Pontiac Mechthilde, Lorena Korndyke Louise, Lady Pontiac Mead, Dora Spofford Korndyke, Sita De Kol Princess II, Floa Bergsma Butter Girl, Lady Segis Douwe, Roxberry Lass De Kol II Lass, Molly Woodcrest Pontiac, Merci De Kol Burke, Inka Burke Pontiac, Minnie Johanna De Kol II, Abbie Korndyke Segis, Abbie Korndyke Pontiac, Sadie Adiantum Pontiac, May Altoana Pontiac, Princess Zozo Pontiac.

Wm. Bishop. Marilla Queen Segis, Our Pride II, Segis Burke De Kol Pontiac.

Frank Helm. Miss Valley Mead Walker, Elmwood Butter Girl.

S. M. Measley. De Kol Fidonna Oak Homestead, Minnehaha Gerben Korndyke, Claria Vrooman Topsy Pontiac.

I. G. Zumwalt. Nutula Korndyke Fobes, Aralia De Kol Pontiac Burke, Topsy Clothilde Hengerveld.

McCloud River Lumber Company. Emperor Pontiac Mechthilde, Lorena Korndyke.

H. E. Cornwell. King Segis Pontiac Emperor.

Jas. McGillivray. Creamcup Electra Pontiac, Dilly Prilly Walker, Creamcup Ruby Pontiac Burke, Astrea Johanna Pontiac, Amy Veendam De Kol, Sora Veeman, Abbie Segis Pontiac, Duchess Topsy Korndyke, Calf of above cow, Sarah Topsy Pontiac, Heifer Calf out of Amy Veendam Pontiac, Wiegertje Girl Pontiac, Sugar Queen Topsy II, Princess Wiegertje Pontiac, Marilla De Kol II.

Frankenheimer Bros. Lady Beets Gewina, Our Pride, Miss Douwe of Riverside.

W. F. Mitchell. King Segis Pontiac Crane De Kol.

Kamehameha Schools. Marilla Queen Pontiac, May Altoana Pietertje II, Uneeda Abbie Korndyke, Lady Hartog Pontiac, King Korndyke Pontiac Terpstra.

B. R. Linte. Cobossie Butter Girl.

J. H. Henderson. Molly Korndyke Hengerveld, Josephine Creamelle, Lady Chloe Mechthilde Korndyke, Inka Posch Parthenia, May Altoana Hartog Pontiac, Homestead Girl Wiertertje II, Arfidgara, Erma Pietertje Netherland De Kol, Duchess Lillian Hengerveld, Mary Juliana II, Pietertje Niko Netherland Maid II, Alka Hengerveld, Pietertje, Honolulu Baby De Kol, Countess Mechthilde Aggie II, Princess Pauline Beauty II, Chloe Aggie Sarcastic.

Lottie MacMoore. Creamcup Agatha Teake.

Geo. F. Starin. Dorothy Koningen Spofford.

J. H. Williams. Empress Glista Flossie.

C. W. Williams. Arfidgara Segis, Xatasso II, Lady Gewina Pontiac.

H. Renaud. Aralia De Kol Pontiac Mead.

J. F. March. Velma Korndyke Netherland.

Leland Stanford University. Segis De Kol Pontiac Burke.

Dr. T. J. Cox. Buckeye De Kol Gerben II, Filled Full.

J. H. Guill. Lady Beets Pontiac.

Geo. Winter. Parthenia Korndyke De Kol III.

J. H. Harlan. Flossie Cornucopia Johanna III, Flossie Cornucopia

Danger for the Great Milker

Queen Schillaard,
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Owned by Dr. Roberts
Year's Butter Record
680 Pounds.



Freshening time is the most critical period in the life of a cow or heifer. No injury or sickness has such disastrous results as failure to properly clean. If blood poisoning does not set in (sometimes causing death), the animal will be ruined as a milk producer for the whole season. Many cows, especially heifers, retain the afterbirth. If allowed to remain, disease and blood poisoning may follow. If you forcibly remove it, some parts of the afterbirth will remain. These parts decompose and are absorbed by the animal, causing a rapid wasting of flesh and loss of milk. Avoid all danger by using

Dr. David Roberts' COW CLEANER AND ANTISEPTO

Cow Cleaner stimulates the circulation in the blood vessels of the genital organs, causing the afterbirth to ripen and come away of its own weight, leaving the organs in a healthy condition. Cleanse the genital organs with Antisepto—it is cooling, soothing and healing, all of which are essential to health. Keep your cows in a healthy breeding condition. Give them the help they need at this trying time.

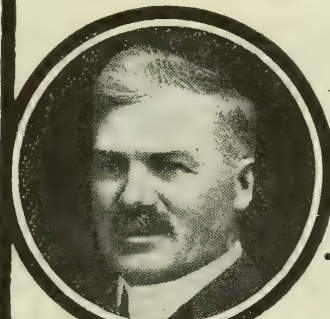
Cow Tonic Aids digestion, increases appetite, tones and keeps animals in condition.

Breeding Tonic Acts on the genital organs and puts in condition for breeding.

Calf Cholera Remedy Prevents scours and calf cholera. Avoids stunting. Keeps calves growing.

Ask at your drug store also for Dr. Roberts' Calf Meal, Diolice, Badger Balm, Laxotonic and Stokvigor.

There is a Roberts' medicine for every common animal ailment. Over 500,000 copies of the great book (184 pages), "Practical Home Veterinarian," are already in the hands of live stock owners. If you do not have a copy, send 25 cents and copy will be sent postpaid, together with 8-ounce sample of Stokvigor.



Go to your druggist. Buy Dr. Roberts' animal medicines and tonics. Over 3500 drug stores carry them. Take no other. If your druggist hasn't Roberts' goods, write us direct. Give us his name. We will see you are promptly supplied. Look for and insist on getting the package that bears Dr. Roberts' picture.

Special Sample Offer—Stokvigor, 10c

This trial package of Stokvigor will care for one cow or horse two weeks. Get it and see for yourself what a nice stock tonic or stock food you can make. Enclose dime or stamps.

Dr. David Roberts Veterinary Co.

140 Wisconsin Avenue

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ALL OUR SILOS, TANKS AND PIPE ARE DESIGNED BY ENGINEERS TO MEET EVERY CONDITION. MADE IN OUR BIG FACTORY FROM CLEAR, AIR DRIED REDWOOD. SELECTED FROM A STOCK OF 40 MILLION FEET WHICH WE CARRY AT ALL TIMES.

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BUILT FOR YOUR PARTICULAR NEEDS. EXACTLY AS YOU WANT THEM. ALL SIZES AND DIMENSIONS

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MACHINE BANDED OR CONTINUOUS STAVE FOR WATER SUPPLY, IRRIGATION OR POWER. CHEAPER THAN ANY OTHER PIPE OF EQUAL SIZE OR CAPACITY. LONGER LIVED THAN ANY METAL PIPE EXCEPT CAST IRON.



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Fitted with the
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Eliminates the trouble causing relief valve.
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Saves in power when nozzles are not in use.
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Now on exhibition at the Panama Exposition.
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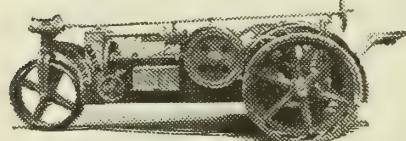
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will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula, or any unhealthy sore quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister under bandage or remove the hair, and you can work the horse. \$2.00 per bottle, delivered. Book 7 K free.

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Price is a secondary consideration in buying a farm Engine. What you want to know is "HOW LONG WILL IT LAST?" and "CAN I DEPEND ON IT?"

When you Buy an

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Gasoline-Kerosene or Distillate

There are more drop-forged and case-hardened parts on the Alpha Engine than any other. Semi-steel cylinders and piston accurately ground to size. This means sustained power and an engine accurate in adjustment and therefore as economical after five years' use as when new. THE VIKING ROTARY PUMP will reduce your cost of irrigation.

High efficiency. Self-priming.

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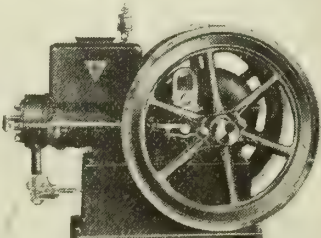
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Johanna II, Pearl Nephele Pontiac.
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E. F. Pederson. Briar Pontiac Girl.
W. T. McBride. Maylntje II.



Daughters of Sir Pontiac Aaggie's Son, One of the Hanford Sale Offerings.

D. W. Norman. Parthena Korn-dyke De Kol IV.
E. S. Tomasi. Merci King Pontiac Artis II.
Geo. Orr. King Kasteleintje Segis II.
F. W. Bennett. Prince Zozo Pontiac.
Chas. Colquhoun. Prince Lynfeld Pontiac.

BERKSHIRE PROGRESS

Great progress is being made in the pure bred hog business in California. There are a great many high class herds in the state and to these are constantly being added individuals of outstanding merit.

Butte City Ranch at Butte City in Glenn County recently purchased Schoolmaster Premier 209275 in the sale of W. S. Corsa of Whitehall, Illinois. This is one of the best herds in America.

Schoolmaster Premier is by Schoolmaster 2d, one of the best sons of the famous Masterpiece, and is described as having an extra good head, a deep, long body, good hams, feet and legs, and being very smooth. He combines the blood of the Masterpiece and Lord Premier's Rival families on a Royal Empress foundation. He will be one of five or six herd boars that will be used in this herd this season.

A GREAT HONOR FOR PROFESSOR HERMS

There is a relish for compliments by all mankind, but who would like to have a well-built, stalwart and efficient, even though vivacious, louse named after them?

Those who long for honors should have heart, for who knows but what some great-hearted scientist may sometime name a louse after them, and thus carry their fame through the ages.

Such honor has come to Prof. William Brodbeck Herms, member of the Berkeley board of education and associate professor of parasitology at the University of California.

Prof. Herms didn't particularly need the honor. In fact, he has several other bugs named after him, though perhaps none quite so sprightly of manner and temper. But he is pleased, nevertheless, for scientists are more charitable toward insects than plain people.—L A Times.

CALIFORNIA HOG BOOK

"The California Hog Book," a compilation of information about hogs, applied to California conditions, by W. S. Guilford, director of agriculture for the Sacramento Valley Irrigation Company, published by the Pacific

Rural Press at \$2.00, supplied with a year's subscription to California Cultivator, \$2.75 postpaid.

Years of close observation and experience have fitted Mr. Guilford to write a book on hogs. He has done his work well, and the 252 pages of this book are filled with information which the practical hog man of California will appreciate. That there is occasion for hog men of California to read such a book is shown by the first and third paragraphs of Chapter I.

"There were 877,000 hogs in California in 1915—and about 3,000,000 people—less than a hog per capita. In the entire United States there are now about 4,000,000 hogs—and about 100,000,000 people—more than half a hog per capita.

"There are no figures to show what the annual per capita consumption for California is, but we import over 2,000 carloads of hams, bacon and other pork products from the east, and nearly 1,500 cars of live hogs from Utah, Idaho and other states every year."

We have always urged greater production of pork in California. As Mr. Guilford says:

"The shortage has been caused not by difficulties, but by lack of producers. Hundreds and thousands of hogs are raised on the big grain and stock ranches in the state—and an increasing number on the smaller, more intensively cultivated, diversified, irrigated farms. It is from an increase in the number of successful owners and operators of the type of farm last mentioned that we must look for the production of more and better hogs annually, and everything that is done to encourage the establishment of such places on a sound basis is worthy the attention of the most progressive business men and financiers in the state—to foster such development is to be a factor in the best sort of empire building."

There are 22 chapters in the book, touching upon the industry in general, California conditions, description of hogs, judging and selecting, care, feeds and feeding conditions, buildings and appliances, health and diseases, markets and marketing, and many other most helpful topics.

PRIZE BOY FARMERS TO HOLD CONVENTION

The greatest convention of boys' agricultural clubs ever held in any state is to take place at the university farm at Davis from Thursday afternoon, October 14, to Saturday morning, October 16, to celebrate their achievements in the yearly crop-growing contests which are doing wonders in showing what good farming really means.

There will be 250 boys there to represent 55 out of the 65 boys' clubs organized by the University of California. Nowhere are greater contributions to the prosperity of the community being made by the boys' clubs than in California, for the prize winners and their close competitors are giving to their neighborhoods examples of how to improve the yield and the profit of California farms which often make their elders' eyes stick out of their heads with surprise and admiration.

Florida's orange shipping season began October 1.

Veterinary Queries



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Eczema

I recently bought a five-year-old mare and she has Texas itch or something of the kind. We have applied sheep dip No. 1 according to directions once a week for five weeks, then used it about four times as strong several times. Still it is not cured. Is there a remedy for it?—Subscriber, Phoenix.

It may be due to something that is more than skin deep. Try Fowler's solution of arsenic; a tablespoon once a day for a month.

Scours in a Goat

I have a fine goat that has the scours and I have tried all the remedies I know of without benefit. Can you send me a remedy?—Subscriber, Santa Cruz.

Give ten grains of tannoform (Merck) morning and evening for a week. If your druggist does not have it then give the following powders: tannic acid one dram, powdered gentian one ounce and soda bicarbonate one ounce. Mix and divide into 10 powders and give one powder morning and evening.

Lung Worms

I have lost several calves about six months old. Finally killed one that was about gone and found its lungs full of white, wire-like worms from one to one and one-half inches long. I now have two more that I fear may have them. What can be done for them and how can I get rid of them? Do they stay in the soil? Please tell me all about them.—Subscriber, Lator.

The history of the lung worm is not well known, but it is supposed to be in damp places in the pasture and to be taken in with the food. We often hear of it affecting young cattle in the summer and fall. The best remedy known is turpentine. Drench the calf with one ounce of turpentine in a cup of milk. For full grown animals double the dose. Repeat this treatment every day or two until cured. A better and quicker way to reach the worms is to use a hypodermic syringe and inject one-fourth the dose of turpentine clear, directly into the windpipe. The needle of the syringe should be passed through the skin about half way down the neck and between the rings of the windpipe. After injecting the medicine hold the calf's head up for a moment until the medicine runs down into the lungs. Two or three treatments of this kind a day or two apart will usually cure.

Sheath Stopped in Hog

Lost a 50-pound male hog a few days ago. Noticed some time ago that his navel or sheath was swollen slightly. One night he did not eat and next morning walked as if weak in back. Lived three days; back weaker each day although he ate and passed from bowels seemed natural. Have fed dry alfalfa hay and separated milk. Gave him physic and he died almost immediately. Opened him and his organs appeared natural except the bladder, which was much enlarged and perfectly black. Can you tell what was the trouble and what to do in case others are affected?—Subscriber, Bravo.

There seems to be a large percentage of lime in the urine of hogs in the Western country and sometimes the lime accumulates in the sheaths of hogs and if not washed out will cause enough irritation to close the passage and the dammed up urine will cause inflammation of the bladder. When you see the sheath swollen wash it out with plenty of warm water with a little soap in it and squeeze out the accumulations that may be there. It is not a disease, only a foul condition.

Poultry for Profit

POULTRY TROUBLES DURING THE FALL SEASON

THE success of the flock during the winter season depends greatly upon how the birds pass through the fall season, which usually finds the flock composed of birds of all ages and all conditions and stages of moult.

The roosting quarters are found scattered all over the place, some roosting on fences, some in the poultry house, some in trees, and some in hovers or jammed into the corner of a house till they are two or three deep during cool nights. The ones roosting in houses and on the floor in the corner of some house are the ones which need attention.

One of the most common troubles noticed in the fall and early winter is colds and roup. A cold is usually the first stage or stepping stone to roup so that if colds are prevented, roup will be avoided. The two common causes for colds are an unequal heating of the body and the rapid reduction of the temperature. Roosting in a draft will cause a cold according to the first stage, and crowding will cause it by the second.

If a man's temperature gets too high from exercise or extra clothing, nature sends out a perspiration or sweat onto the surface and by evaporation the heat units are taken up and the body is cooled. A hen's temperature is not reduced in this way, for she has no sweat glands in the skin. The moisture with the hen is carried out through the breath, so for this reason if a hen is very warm she will have her mouth open bellowsing the air in and out to take out the moisture and not to get an extra supply of oxygen into her lungs. If the chickens are crowded at night till they are very warm, then come out into a cold, frosty morning, the breathing organs are so chilled that a cold is the result, which paves the way for roup.

Many cases of roup attributed to the winter season had their real origin in the fall season. A hen's temperature is 106½ degrees. She is covered with a coat of feathers for protection. Therefore hens should not be expected to live under conditions which are comfortable for man. More birds are injured by housing too closely and crowding than by the opposite.

While we do not believe in a "balm for all ills," yet we find the following a good preventive and treatment for roup, canker, chicken pox, etc.: Magnesium sulphate, 10 ounces; magnesium oxide, 1 ounce; sulphate of iron, 2 ounces; ground ginger, 2 ounces; sulphur, 3 ounces.

Give one tablespoon in moist mash to 12 birds each morning for three mornings and discontinue till needed.

The magnesium sulphate acts on the intestines, the magnesium oxide on the kidneys, sulphate of iron acts on the blood, the ground ginger stimulates all organs, and the sulphur is a general antiseptic. This is therefore a good system treatment or tonic for the fowls. For severe cases the dose mentioned above should be increased.

No one, however, should ever try to control a disease without first removing the cause. If your birds have a cold, first remove the cause, then administer treatment.

During the fall season all grains, weed seeds, etc., ripen, so that if the birds have free range they have an abundant supply of food, but the ration is often unbalanced for the ration usually contains too much fat producing elements with not enough tissue forming elements. If the birds have range on clover, alfalfa, cowpeas, etc., the ration is more apt to be balanced, but if they range in a corn field, the hens should be fed protein in some other form, for without it, the hens will get very fat but produce no eggs.

Get all pullets to laying before cold weather. If you do not, it will be hard to get them to lay during the winter. Pullets which lay in the fall make bet-

ter breeders in the spring than those which wait till spring to begin laying. —Missouri Poultry Experiment Station, Mountain Grove.

NATIONAL EGG LAYING CONTEST

There is much interest in the national egg laying contest being conducted by the Missouri state poultry experiment station at Mountain Grove.

The ten highest pens for the eleven months in the national contest are as follows:

Pen 21, S. C. White Leghorns, England, 882 eggs.

Pen 1, S. C. White Leghorns, Pennsylvania, 806 eggs.

Pen 19, S. C. White Leghorns, England, 805 eggs.

Pen 75, Rhode Island Whites, Illinois, 786 eggs.

Pen 74, S. C. Reds, Pennsylvania, 745 eggs.

Pen 3, S. C. White Leghorns, Pennsylvania, 736 eggs.

Pen 29, Black Leghorns, Georgia, 733 eggs.

Pen 43, White Orpingtons, Wisconsin, 722 eggs.

Pen 76, Rhode Island Whites, New Jersey, 721 eggs.

Pen 8, S. C. White Leghorns, Kentucky, 708 eggs.

The five hens which have the high-

VEGETINE Makes Bank Balances

We can save you from ten to twenty five per cent on your feed bills. This means the difference between success and failure in the chicken business.

We have a wonderful new poultry food that contains more protein than Bran, which sells at a price thirty-five to fifty per cent cheaper than Bran. Write for circular "Food for Thought and Feed for Chickens," which tell all about this great money saver.

Mr. Kline of Burbank, Cal., one of the most successful poultrymen of Southern California, says:

"I have been using VEGETINE for the past four months on my whole flock and as far as I am able to determine at this time I am fully convinced that it is a saving in food price. We have gotten up to and above normal egg yield during the time at an appreciably lower cost."

Globe Grain & Milling Co.
Los Angeles Colton San Diego

Baby Chicks

All standard varieties of heavy breeds. Very fine S. C. Black Minorcas. McFarland Strain of White Leghorns. "Quality" our motto. Booking orders for fall delivery. Established 1909.

ARTESIA HATCHERY

Capacity 75,000 eggs. F. W. Foster, Prop.

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BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery.

EXTRA SELECTED BLACK MINORCAS & WHITE LEGHORNS OUR SPECIALTY

Our Chicks are hatched in the **BEST VENTILATED HATCHERY IN CALIFORNIA**

INSTRUCTIONS HOW TO RAISE CHICKS FREE

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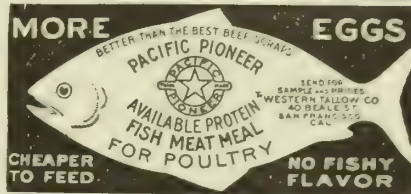
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NOW is the time to Feed Coulson's Egg Food

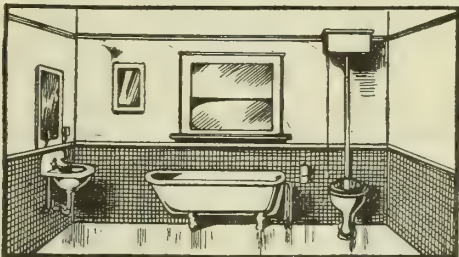
to your pullets as well as your hens, commencing at the age of three months. This enables them to rapidly complete their growth and get down to the business of egg laying. Write for free book "Chickens" and don't be put off with any other egg food.

Coulson Co.
Petaluma, Cal.



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"Every Day is Bargain Day" to the Man who Buys BUILDING MATERIAL from WHITING MEAD'S Big CATALOG! 1915 Edition is FREE to you - Saves 20% to 40%

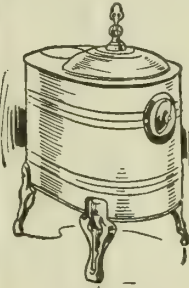


Shovels—At Wholesale Cost—Shovels

—You may go a life time before you get such an opportunity again. These shovels are in A-1 order but have been slightly smoked by means of a fire while in transit.

—Every one in perfect working condition, all styles and sizes; note the prices:

Long Handle, Round Point Shovels, per doz. \$4.85 or 50c each
Long Handle, Square Point Shovels, per doz. \$4.85 or 50c each
D Handle, Round Point Shovels, per doz. \$4.15 or 50c each
D Handle, Square Point Shovels, per doz. \$4.15 or 50c each
Long Handle Spades, per dozen \$3.75 or 40c each
D Handle Spades, per dozen \$3.75 or 40c each
Long Handle Scoops, per dozen \$3.75 or 40c each
D Handle Scoops, per dozen \$3.50 or 40c each



"Air Tight" Drum Heaters \$1.10 and \$1.25

—These splendid little heaters have never been equaled for giving quick, intense heat with a very little fuel.

—Burn wood, papers or coal with equally satisfactory results. Nothing better in a stove heater. Usually sold for much more but offered by us at \$1.10 and \$1.25.

\$15 to \$18 Front Doors \$10 Veneered Oak With Plate Glass

—A typical value from our Sash and Door Dept., finest quality veneered oak doors with plate glass panels at top. Secured by special purchases recently and not mentioned in our catalog. All standard sizes and styles. Write for further details.

WHITING-MEAD COMPANY

9th and Maple Avenue

LOS ANGELES

\$50 Complete Bathroom Outfit for \$36.50

Consists of:

One Lavatory with Nickel Plated China Index Compression Basin, marked hot and cold, and Nickel Plated Adjustable P Trap and Rubber Stop.

One Heavy Cast Iron Porcelain Enamel Bath Tub, 5 ft. with 3-in. roll rim, including No. 41 Nickel Plated Fuller Bath Cock, offset supply pipes, connected waste and overflow, and slip joint nuts.

One High Tank, 6-gallon, Zinc-Lined Toilet Combination, complete with valve. Finished either in Natural or Golden Oak.

We guarantee this outfit in every respect—if you are not thoroughly satisfied with it, return it and we will refund your money.

This outfit was never before sold under \$50.00 retail, and is accompanied by our liberal money-back guarantee.

Shipping weight of outfit, complete, 500 lbs. First-class freight.

"Standard" Roofing Paper

—A splendid quality of roofing paper that most firms would sell 20 to 40 per cent higher. Each roll complete with necessary cement, nails, etc., ready to lay.

1-ply, double-sanded, per roll of 108 square feet..... \$1.15

2-ply, double-sanded, per roll of 108 square feet..... \$1.40

3-ply, double-sanded, per roll of 108 square feet..... \$1.65

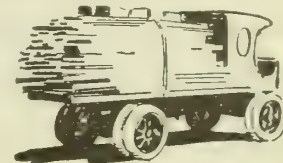
1-ply, "King" smooth, per roll of 108 square feet..... \$1.25

2-ply, "King" smooth, per roll of 108 square feet..... \$1.50

3-ply, "King" smooth, per roll of 108 square feet..... \$1.75

ber we ship direct to you.

Send for free sample. Remem-



Oregon Pine \$10 to \$15

—Good new rough Oregon Pine lumber, all sizes, at \$10 to \$15 per thousand.

—Oregon Pine lath, 4 ft., new, \$2.50 per thousand.

—Best grade Slashed Grain Oregon Pine, sanded finish, \$37.50 per thousand. This makes a beautiful interior finish.

—These prices will give you an idea of how our lumber department can save you money. Send in your lists and let us give you our price delivered.

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MACHINERY

USED RANCH MACHINERY.

Ranchers, attention! Following prices just to give you line on how much we can save you, with 15 years' experience. You will find our prices absolutely cheapest good material can be produced for and guaranteed.

USED WINDMILLS—WINDMILLS NEW 8-ft. steel aeromotor, steel tower, complete, \$30; 10-ft. steel direct mill, \$18; 10-ft. wood mill, fine, \$10; 10-ft. steel stir, \$25; 12-ft. steel mills, \$39. How's this? 8-ft. aeromotor tower, piping, 3000 tank and stand, complete, at \$58, or \$68 on cars.

USED TANKS—TANKS NEW Speaking of tanks; our books show we have sold over 6000 in the last 15 years. This experience should be worth something to you.

FEW PRICES.

Redwood, 1000, \$13; 2000, \$19.50; 3000, \$25; 4000, \$29; 5000, \$35; 10,000, nearly new, \$55. 25,000, with 20-ft. stand, \$75; 35,000 redwood, 3-inch material, 40 ft. stand, finest in Los Angeles, \$130; 50,000 with stand, \$250. Wouldn't this be fine for irrigation subdivision or fire protection for small town? Be quick, as these big tanks won't last at these prices. The last one quoted cost \$980 and is as good as new now. We manufacture new galvanized tanks—1000, \$19.50; 2000, \$29.50; also wagon tanks, irrigating pipe.

ENGINES—ENGINES

1½-h., \$23; 2-h. Fairbanks, with jack, \$55; 3-h. R. & V., \$55; 6-h. Olds, \$68; 6-h. auto engine, \$25; 12-h. Stover, \$175; 11-h. White & Middleton, \$175; 28-h. Lambert, \$275; 50-h. Lambert, \$600.

PUMPS—PUMPS—PUMPS

2-inch horizontal, new, \$25; 3-inch, \$29; 4-inch, \$39; 2-stage, 5 horizontal, nearly new, cost \$300, sell for \$125; 8-inch single, \$90; 10-inch, \$90; 2½, new, \$35; No. 3, 2-stage, \$35 4, \$40; two 5-inch Krogh verticals, choice, \$48. How's this? No. 6 centrifugal pump with 45 ft. shaft, bearings, complete, \$90; 7-inch vertical Krogh, nearly new, \$95. Two-stage verticals 3-inch and 5-inch. New, 6-inch rotary, \$50. Why pay three times these prices for new ones when these pumps are right? Did you ever stop to think your new pump you buy will be "second-hand" in few months, but not necessarily worn out?

USED RANCH MACHINERY

Mowers, \$15 to \$25; mouldboard and disc riding plows, \$17 to \$29; fine hay rakes, \$15 to \$18; 6 gang disc for tractor, ½ price; beet seeder, \$29; \$160 Superior grain drill, \$75; 12 disc cultivator, \$19.50; \$40 clod crusher and roller, \$19; 3 gang 3-in. mouldboard plow, \$17.50; balers, headers, scrapers. Anything, everything ranchers need.

BOILERS, PIPE, FITTINGS, ETC. Notice—Have every article we advertise or customer's name sold to. We do no fake advertising. Why not trade us what you don't want for what you need? If we haven't what you want, can find it for you quicker and cheaper than you can. We buy first-class used machinery, if price is right. No junk or stolen machinery wanted. DEMMITT CO., 120 N. Main St., Los Angeles. A5191, Broadway 3650.

For Sale—Used and New Gas Engines, 2 H. P. Up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild Gas Engines correctly. Get prices. Lloyd, 806-808 N. Main St., Los Angeles. F7020—Broadway 4103.

For Sale—Windmills, engines, tanks, pipe, horses, wagons, harness. We install your outfit. Will buy anything you have. Ranchers' Exchange, 1630 So. Main St., Los Angeles.

Machinery of Every Description Bought and Sold—Buttress & McClellan, 205-207 N. Los Angeles street, Los Angeles. Broadway 8098; A5473.

TREES

Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

Choice Lot of One-year-old Apple Trees; first-class stock, 4 to 6 feet, \$6.00 per 100. Full line of nursery stock at equally low prices. Catalogue and price list on request. Wirt Nursery, R. F. D. No. 1, Portland, Oregon.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoa, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

The "Chappelow" Avocado is the richest grown—over 29 per cent fat. Buds from the parent trees \$5 per 100 by mail or express prepaid. Address Wm. Chappelow, Route 1, Box 104, Monrovia, Calif.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placentia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Late Valencia, Navel, Marsh Seedless Grapefruit, positively finest grown for Fall planting. 12½¢ in the tree row. Phone Whittier line 5544. Brunson Nursery Co., Santa Fe Springs, Cal.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Budded Avocados—All varieties. Write for descriptive catalogue. Newbery Sherlock, R. F. D. No. 2, Pasadena, Cal.

SCHOOLS AND COLLEGES

Wanted—About seventy-five young men and women to enter The WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address, WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal., 624 E. Main St.

LIVE STOCK

Big Type Poland Chinas—I have an extra good lot of strictly high class young boars from three months to one year old that are fit to head any herd anywhere. Visitors say they are the best they have seen. They have the large size, the good hams and shoulders, the strong arched backs, great length and depth of body, plenty of smoothness, mellowness and quality—in fact, they have two good ends and a good middle, are good lookers and money makers. Their dams are either from Illinois, Iowa or Missouri, or they are from dams whose sire or dam are from these states. These boars are sired by Iowa Wonder who will weigh over 1000 pounds in show condition. He is a son of a WONDER, the greatest Poland China boar living or dead. These young boars carry the stamp of their sire and will sire pigs that will please you. Satisfaction guaranteed in every particular. I am overstocked. I have boars galore. I will sell them at extremely low bargain prices. No females for sale at present. The book on "THE HOG SUPREME—THE POLAND CHINA" will be sent to you free for the asking.

Yours for the BIG TYPE—the kind that grow faster and larger and have more pigs. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. Swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight, with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Del Dayo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Wanted—Holstein cows; 5 to 25 well-bred, heavy producing, carrying first to third calf. Must be fine dairy type, marked like purebreds and bargains for cash. Want for Tulare County ranch. R. H. Whitten, R. D. 5, Box 646, Los Angeles.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

Cattle Instruments of every description at the right price to be had at O. J. Weber Co., manufacturers and importers of Machinery, Saws and Appliances for the Dairy and Creamery, 759 So. Los Angeles St., Los Angeles, Cal.

Thoroughbred Poland China Boars of large type for sale. Buy at home and save express. Prices reasonable. For further particulars write to Maywood Colony Nursery, Corning, Cal.

Blue Ribbon Herd Duroc-Jersey Hogs. Service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F., 1915, prices. John P. Dagg, Modesto, California.

DUROC JERSEY BOARS

Trios of boar and sows not akin of the best blood lines at reasonable prices. Write me. L. L. DeYoung, Sheldon, Ia.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Thoroughbred Berkshire and Tamworth Hogs for Sale—Western Hog Company, formed by staff of Newmark Grain Co., Los Angeles. Ranch at Elsinore.

Milch Goats—Young Nubian Swiss does from heavy milking stock. For prices, etc., write Miss S. Stocker, 587 N. Broad St., San Luis Obispo, Cal.

Poland Chinas—200 head fine individuals, weanlings to eight months. Satisfaction or money refunded. Geo. V. Beckman, Lodi, Cal.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Navato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Ricconi Bros., Mountain View, Cal.

Poland Chinas—Young Stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

Glennview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

Berkshires—Boar pigs for sale. Butte City Ranch, Butte City, Glenn Co., California.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

SEEDS AND PLANTS

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs, \$8.50 per 100; \$50 per 1,000. Labranza Ranch, Athlone, Merced Co., Cal.

For Sale—First class re-cleaned alfalfa seed that has been inspected in the field by the Horticultural Commissioner, and is free from noxious weeds. Also choice Peruvian seed. O. C. Nordahl, Bard, Cal. Fifty tons of choice white Egyptian corn for sale at \$30.00 per ton f. o. b. Lemoore, also a few tons of choice feterita at same price. C. R. Flory, Lemoore, Calif.

Peruvian Alfalfa Seed—Hairy varieties, also Algerian wheat. S. P. Huss, Yuma, Arizona.

POULTRY

Just Out—The Cultivator Poultry Book, "Poultry for Profit," by Jean A. Koethen. Published by the Cultivator Publishing Co. Highly endorsed by experts. Over 200 pages, 50 illustrations. Contains simple methods of avoiding and overcoming difficulties. A guide to poultry success under Western conditions—it tells what to do, why to do it, and how to do it. Nicely bound in cloth. Price \$1.00 postpaid, or with Cultivator one year, \$1.75. Send orders to Cultivator Publishing Co., 115-117 North Broadway, Los Angeles, Cal.

Baby Chicks, White Leghorns and Rhode Island Reds. Buy chicks of an expert incubator man. I am located at Gardena, a suburb of Los Angeles, among a number of large poultry ranchers who are making money selling eggs to the market. They have large, fine laying, healthy hens; I have no hens of my own, but buy my eggs for hatching from these ranches. I will guarantee the safe arrival by express of a full count, strong, vigorous, lively chicks properly hatched. J. W. Lyon, Gardena, Cal.

For Sale—300 Belgian, New Zealand, Flemish breeding does, 75c-\$1.00 each; 600 Blue Bar Homers 60c pair; 100 Carneau and White King pigeons, \$1.50 pair; 1000 young White Leghorn hens over molt, \$9.00 doz. C. L. Dryden, 827 So. Los Angeles St., Alexandria Stables, Los Angeles, Cal.

For Sale—100 splendid Young McFarland White Leghorn hens at \$1 each. All over molt and beginning to lay again. This will be a fine bunch to use for breeders, next year. Wood's Ranch, 1641 West 7th St., Glendale. Glendale 316J.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

S. C. Rhode Island Reds, Lester Tompkins and Winslow strains eggs for hatching. Day old chicks. Prices on application. Rainescourt Poultry Ranch, Zelzah, Calif.

White Leghorn Cockerels of highest utility breeding. Order early. Breeding from our Cockerels will increase vigor and egg yield. Jos. E. Blackshaw, M.D., San Jacinto, Calif.

First Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeye Hatchery, Turlock, Cal.

For Sale—Two Petaluma Brooder House Stoves, at \$20 each, all complete and in perfect condition. Wood's Ranch, 1641 West 7th St., Glendale. Glendale 316J.

Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

MISCELLANEOUS

We Will Pay You \$120.00 to distribute religious literature and take orders in your community; 60 days' work. Man or woman. Experience not required. Spare time may be used. INTERNATIONAL BIBLE PRESS, 936 Winston Building, Philadelphia.

Free Building Plans and Specifications. I represent one of the largest building material houses on the Pacific Coast and will gladly furnish you plans and specification FREE. E. W. Barber, 1625 Staunton Ave., Los Angeles.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

FOR LEASE

Fruit Ranch For Lease—High class apricot and grape ranch, located in the Imperial Valley, for rent on share basis to good man who can finance the labor needed. Produces the earliest apricots and grapes in the United States, so commands fancy prices. A high class proposition for an experienced fruit man with a little money. The American Nile Company, El Centro, Cal.

WANTED

Wanted—Experienced farmer to manage 82 acres alfalfa, hogs, garden truck, Whittier Boulevard, five miles Los Angeles; income \$10,000 to \$12,000 year; free irrigation water. Want man who will buy divided or undivided half interest; \$5000 cash, balance crops. Write owner Eugene Chilberg, Rivera, Cal.

Wanted—To lease an improved ranch on share basis by 2 reliable and experienced parties. Write particulars. C. A. Kobusch, 2130 Pasadena Ave., Los Angeles, Calif.

Wanted—To hear from breeder of White Wyandottes who can supply fertile eggs in January. Bellows Bros., Lakeside, Cal.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

DUCKS

For Sale—Thoroughbred Imperial White Pekin ducklings of all ages and young breeders from first-class selected stock. Santa Cruz Pekin Duck Farm, Santa Cruz, Calif.

Muscovy Ducks—Quackless; rapid growers, light feeders and very hardy; stock and eggs. Caldwell Bros., Box 613-R, Los Angeles.

TURKEYS

Turkey Eggs for Hatching—Eggs from fine Mammoth Bronze Turkeys, guaranteed fertile. \$1.50 per dozen, also some fine young stock for sale, \$15.00 a trio. Address, John Hayes, R. F. D., Hynes, Calif.

Mammoth White Holland Turkeys—H. McKusick, Calexico, Calif.

FARM LANDS FOR SALE

ALMOND LAND ALMOND LAND FAMOUS ARBUCKLE ALMOND DISTRICT—20 acres of 6-year-old trees; orchard in first-class condition; located 1 mile from town; land adjoining it nearly all developed; price \$300 per acre, one-half cash and nothing to pay on the balance for 4 years only the interest. The crops will more than pay out the balance. There is nothing wrong with this orchard on the price.

10 acres of 2-year-old almonds, ½ mile from town. Located in the heart of a 3,000-acre subdivision, where there is 1,250 acres planted to almonds. A small, new house and a good well with gasoline engine and pump. Price \$1,700, \$1,000 cash, balance \$15 per mo. No interest or taxes on deferred payments. Write for literature on our subdivision. NELSON REALTY CO.

Pioneer Dealers in Almond Land, Arbutle, California.

Carlsbad Irrigated Farm Land—Bordering ocean; on state paved highway and Santa Fe Ry.; 80 miles south of Los Angeles; government records show Carlsbad warmest in winter, coolest in summer of any spot in Cal.; deep sandy loam, model water system; low rates; lemons mature in summer when price is highest; immense profits in fruits and berries adaptable to coast territory; winter vegetables without competition; minimum temperature 1914 was 41 degrees; tomatoes, chili, peas, beans, eggplant, rhubarb, etc., bring \$150 to \$400 per acre; easy purchase terms. South Coast Land Co., G. Buxton, Sales Agt., Carlsbad, Cal.

FARMERS WANTED

VICTORIA, AUSTRALIA, offers special inducements. Government land, water, railways, free schools, 3½ years to pay for farms adapted to alfalfa, corn, sugar beets, fruit, etc. Climate like California. Ample markets. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

School Land Now For Sale—600,000 acres to select from. Lists, particulars, SCHOOL-LAND MAP, \$2.50. Also County Section Maps, showing GOVERNMENT LAND, \$2.50, any county. Order today. "Land Reporter," now, until 1917, \$2.50. Subscribe at once. JOSEPH CLARK, Sacramento.

Cheap—Six acres Blue Gum Eucalyptus, El Cajon valley, county of San Diego, near railroad; trees over 3 years old; price very reasonable; must sell immediately. Further information, price, write A. P. Schummers, 100 N. Franklin, Austin, Minn.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

For Sale or Exchange for Southern California acreage, 4 acres fine bulb or vegetable land in city of Santa Cruz. William Richard, owner, 438 River St., Santa Cruz, Cal.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

est records for the eleven months are as follows:

Hen 129, Pen 21, S. C. White Leghorns, England, 214 eggs.

Hen 2, Pen 1, S. C. White Leghorns, Pennsylvania, 206 eggs.

Hen 277, Pen 43, White Orpington, Wisconsin, 200 eggs.

Hen 131, Pen 21, S. C. White Leghorn, England, 196 eggs.

Hen 73, Pen 13, S. C. White Leghorn, Pennsylvania, 194 eggs.

The five highest pens for September are as follows:

Pen 74, S. C. Reds, Pennsylvania, 94 eggs.

Pen 76, Rhode Island Whites, New Jersey, 91 eggs.

Pen 73, S. C. Reds, Missouri, 86 eggs.

Pen 35, Anconas, New Jersey, 80 eggs.

Pen 21, S. C. White Leghorns, England, 79 eggs.

The total number of eggs laid in this contest for September was 2871.

The cup was won by Pen 73, with a record of 94 eggs.

DUCK NOTES

"Don't keep two or three different kinds of ducks. Choose one variety and breed for quality.

"Don't try to raise ducklings on whole wheat, cracked corn, or commercial chick feeds. If used at all these feeds should be well cooked for ordinarily ducks do not consume enough grit to grind dry grain.

"Don't try, by mixing it with their food, to force ducks to eat more grit than they want.

"Don't omit fresh vegetables and green stuff from their diet.

"Don't be afraid of overloading. Ducks should be fed four or five times daily.

"Don't allow the feed to stand from one meal to the next and expect ducks to be satisfied with it.

"Don't give ducks sour feed, as it is likely to cause convulsions.

"Don't forget plenty of clean, fresh, water, and give them a chance to rest in the shade."

Questions and Answers

THE EDITOR

AND STAFF



Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Not Squash Bugs

I send two bugs, one rather small, steel blue with red spot in middle of back, the other somewhat like the ordinary squash bug with orange colored band around edge. What are they?—Subscriber, Manhattan.

These were referred to Prof. H. J. Quayle, entomologist with the citrus experiment station, Riverside, and he replies: "The larger insect which you thought might be the so-called squash bug is known as the red bug and has the scientific name of *Largus succinctus*. This is one of the species of the family pyrrhocoridae. It is not therefore a member of the squash bug family, or Coreidae. There are a number of different species, as you infer, of the squash bug family. The smaller specimen of steel blue color with a red spot on the back is the young or nymph of the insect named above. The two families mentioned are closely related and some of the species of one very much resemble those of the other. The insect which you enclose is of no very great economic consequence."

Stick Tight Fleas

Please inform me how best to rid hens of stick tight fleas. We have sprayed the houses with the refuse from our acetylene generator. I think the only live fleas are on the hens.—Subscriber, East San Diego.

The stick tight flea is one of the most persistent of the flea tribe and can only be gotten rid of by the most radical measures. As the fleas make their home in the soil, the soil as well as the houses and birds must be treated. I would try spraying well with strong salt water, or you might scatter quantities of salt, and then turn the hose on it, spraying till every bit of salt is dissolved and the ground soaked. Clean the nest boxes thoroughly with the salt water, and paint them and the roosts with corrosive sublimate.

To remove the fleas which are on the bodies of the fowls touch each flea with corrosive sublimate diluted with alcohol. You can use a feather, or, better still, a child's paint brush, for the purpose, but be very careful not to get any into the chicken's eyes or your own or into their mouths. It is a very deadly drug, but is sure destruction to every flea it touches.—J. K. A.

Purchase of Water

A makes agreement to sell to B so many days run of water from his pumping plant each month. How long must such arrangement continue before B acquires a water right? What steps should A take to prevent B acquiring said water right?—Subscriber, Wasco.

B would not acquire a water right, as his contract is merely one of purchase and by the purchase he acknowledges the superior right of A.

Keeping Old Hens

I have about 40 hens, from 17 months to two and one-half years old. They have all been good layers. A few have their new feathers; others

are just getting them. I get from eight to 11 eggs now. Would you advise me to keep them or sell them? I hear that old hens will not lay until spring.—Subscriber, Santa Rosa.

If the hens have been good layers it is probable that many of the yearlings are worth keeping. As to hens past two years of age there is a good deal of doubt. An occasional individual is a profitable layer after the second year, but as a rule they may safely be culled out. If your hens are Leghorns you might try the color test. Pick out those with bright yellow legs and creamy ear-lobes and put them by themselves. These are the hens that are not laying. Then pick out those with the palest legs and ear-lobes and put them by themselves. They are your best layers, and are the hens that are latest to molt. You will then have three lots, but the hens with the pale legs are the only ones you can be sure are worth keeping. You might at the same time try the pelvic bone test. The hens whose pelvic bones are stiff and so close together that you can put but one finger between them are the hens that are not laying, and a Leghorn that is not laying by the first of November is more than likely not to lay till January or February. A 25 per cent egg yield in October is not bad for old hens, but you can improve it by judicious culling.—J. A. K.

Slow Feathering and Foot Trouble

The query here answered has been lost but doubtless the inquirer will see the answer.—Edit.

Slow feathering shows that these birds have not the strong vitality they ought to have. The trouble in the feet may be rheumatism from running in the wet grass or from damp coops or runs, or it may be bumblefoot, which is caused by a bruise on the bottom of the foot or by splinters, bits of broken glass or some other substance that has punctured the foot and caused infection. The first thing to do is to look over the range and houses and find out the cause. If, on examining the foot, you find an abscess containing pus, it will need to be opened and washed out with peroxide. If there is no abscess, but simply soreness and swelling, try soaking the foot twice a day in hot witch-hazel. When you have soaked it as long as you care to, rub the swelling with carbolated vaseline and wrap in a bandage to keep from becoming dry. If many of the flock are affected you can hardly take time for individual treatment and will have to depend on the removal of the cause. See that the birds are in dry, sunny coops, and if possible confine them in a dry, clean run until they have recovered.—J. A. K.

"Waxing" Oranges

I am told that California orange packers use a wax solution as a wash and then polish the fruit. Please give me the formula, also tell me where the machine for doing the polishing may be secured.—Subscriber, Frost Proof, Florida.

Our Florida subscriber has been misinformed regarding the waxing proposition. The natural bloom of the California orange gives to it its attractiveness.

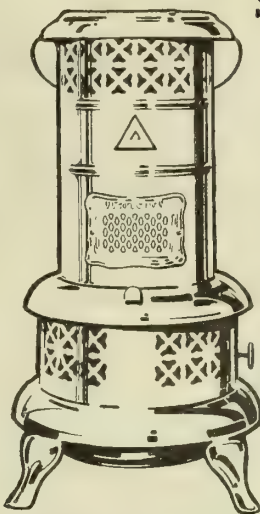
"The Children's Hour"

Protect the children from the draughts. Keep the damp and chill away with a good oil heater.

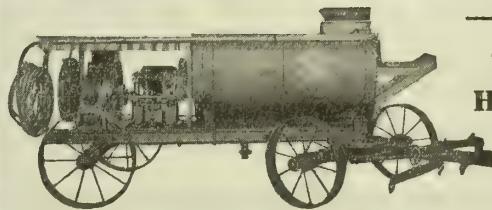
Inexpensive to operate — easily carried from room to room. Smokeless and odorless. Dealers everywhere.

For best results use Pearl Oil

Standard Oil Company
(California)
Los Angeles



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Ghirardelli's is used in more homes in the West than all other brands of chocolate combined. For your protection be sure you get

Ghirardelli's The Only Ground Chocolate

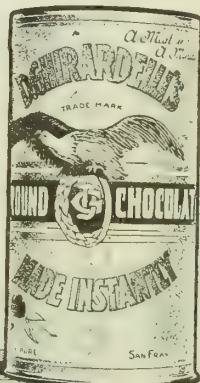
In ½-lb., 1-lb. and 3-lb. hermetically sealed cans. There's a double economy in buying the 3-lb. can.

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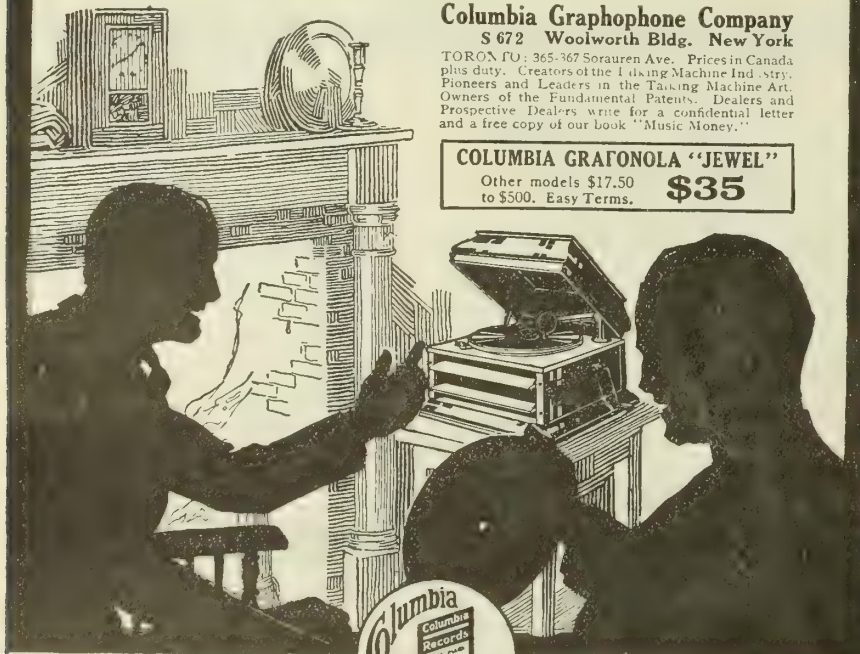
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TORONTO: 365-367 Spadina Ave. Prices in Canada plus duty. Creators of the Talking Machine Industry. Pioneers and Leaders in the Talking Machine Art. Owners of the Fundamental Patents. Dealers and Prospective Dealers write for a confidential letter and a free copy of our book "Music Money."

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Other models \$17.50 to \$500. Easy Terms. **\$35**



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The Household Department



YOU CAN HAVE 'EM

Oh, other skies are fair, no doubt,
And other seas of dimpled blue
Their silver pennants gayly flout,
And glad the days are, through
and through!

In other far, sweet spots the dew
Imprints its kiss upon the flowers
And linnets sing the way to woo,
But I prefer this burg o' ours!

From other shores low hills arise,
With templed sides and greening
crest,

In other harbors, fair of guise,
White wings of ships find place to
rest.

But somehow these don't meet the
test,
These other havens, rockbound, sheer,
One spot of all to me is best—
I'm sort of glad I live right here!

THE END OF THE CHASE

The notebook of a New York man whose business takes him through the rural districts of the West and South contains this transcript from real life:

"We heard the deep baying of a dog soon after we left the turnpike. He seemed to be following a trail through the dense woods on the hills beyond the ravine which extended far to the north in a line parallel with the narrow road. The short, quick yelps made little impression upon me, for I was a poor sportsman, but Si Bailey, after pausing to make sure that the sounds from the dog were familiar, urged the horse into a more rapid trot.

"That's Lije," said he, bringing his hand down vigorously on his knee and leaning forward in his excitement. "He's on a good scent this time. I c'n tell by the way he barks."

"Who is Lije?" I asked.

"Lije is my dog," he answered proudly, "an' the best coonhunter in this part of Indiana, if I do say it myself. If you've got time to stop off a little while, say an hour or such a matter, I shouldn't wonder if I'd be able to show you some fun. It won't be long now till Lije'll have him treed."

"He urged the horse into a still swifter pace, but the mud was deep and the wagon infirm, and at best our progress was slow. We jolted along through ridges of soft, yielding clay and hollows of water and slush till the second milestone had been passed. The wagon had been creaking and groaning dismally throughout the last mile, and just as we crossed the fourth large rut that had been washed out at right angles to the highway the crisis of its agony was reached, and it collapsed with many a lamentation from axle, spring and shaft, Si and I extricated ourselves from the ruins, which were already pretty well imbedded in the mud, and looked around over the leaden landscape.

"We're in for it now," said Si. "We can't go any further till this wagon is mended. I don't mind the breakdown, nor the work, an' I don't suppose you'll be much put out, but I do hate to miss that coon. That's my house yonder. Come on. I'll send one of the boys down for the horse and wagon, while I go after Lije."

"Si lived just across the heavy swell in the twenty-acre meadow which extended from the roadway back to the ravine. His house was visible from the highway. It was a small, unpainted house, and it stood in the middle

of a muddy, littered yard. The picket fence surrounding it was broken here and there, and the gate hung dejectedly on one hinge. The only live thing visible around the dreary habitation was a little girl, who was gathering up broken pieces of railing from the remains of a woodpile at the rear of the smokehouse. She saw us as we passed through the gateway and hurried toward us, leaving a trail of wood as she came. She was a very little girl the plainness of her countenance being accentuated by traces of much weeping.

"Oh, pap," she cried, her grief breaking out anew; "I'm so glad you've come. Mother's had another spell."

"Si passed his heavy hand over his face.

"She has?" he said. "Who's with 'er now?"

"Mis' Johnson. Mr. Johnson's gone for the doctor."

"I must go in an' see 'er," he said. "Come on in, Sir. I'll be ready in a minute."

"Si went around to the kitchen door, and I followed him. Another little girl sat on the doorstep, tying together pieces of coarse strings in heavy shoes. I sat down beside her, and Si went through the kitchen into the next room, where his wife lay. It was one of those warm, oppressive days that come now and then in the middle of March, and through the open doors I could see the woman plainly. It needed only one glance to tell me what the 'spell' had been, for consumption was written in every line of her emaciated face.

"Si went up to the bed and took her thin hand in his.

"How're you feelin', Sary?" he asked.

"She was very weak, and her only reply was a look of tenderness that overspread her homely features and transformed them, for the moment, into something beautiful. He stroked her black hair and leaned forward as if about to kiss her, but just then there came the sound of excited voices and the tramping of heavy feet on the boards outside, and he straightened up and looked around guiltily.

"Si, Si," some one called, and Si hastened to the door.

"Lije's baying was still heard in the woods, and a delegation of three stalwart young fellows had been sent over to bring Si to the scene.

"Get your gun, Si," they shouted. "Lije's got 'im."

"Si's nostrils dilated with sudden energy and his eyes flashed.

"All right," he said. "I'll be there in less 'n no time."

"His wife watched him silently as he took down his gun from its place in the corner, but when he started out she rallied her waning strength and called him back.

"Si," she said faintly, "you mustn't go. I'm very low—I ain't apt to last the day out. Don't go, Si."

"Si Bailey paused and looked at his wife wonderingly.

"Why, Sary," he said, kindly, "I'll be back in half an hour. You'll be all right. You're a little down today, I guess. Lije wouldn't know what had

BABY LAYETTES

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Insurance Records Prove It

Insurance records show that the misuse and abuse of city gas, kerosene and gasoline caused over 100,000 fires in six months. While the misuse and abuse of acetylene caused but four fires during the same period. And there are over a quarter of a million Country-Home-Acetylene-Plants in use. A mighty fine showing for acetylene.



A hundred feet of acetylene makes more light than a thousand feet of city gas. For this reason acetylene burners have small openings—so small that not enough gas could escape from an open burner—in a whole day—to do any harm whatever.

Also acetylene gas is not poisonous to breathe—you would suffer no harm in sleeping under an open unlighted burner.

Also, acetylene burns with no odor whatever—but acetylene from an unlighted burner has a strong pungent odor which immediately attracts attention.

Also, acetylene lights are permanently fastened to walls and ceilings—they cannot be tipped over.

Also, the acetylene producing stone, Union Carbide, won't burn and can't explode.

For these reasons insurance authorities have pronounced acetylene safer than illuminants it is displacing.

Our advertising literature tells all about the best way to make acetylene for country home use, and how it is used extensively for cooking as well as lighting. Just address

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Peoples Gas Building, CHICAGO, ILL. (3)



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The coat that keeps out all the rain. Reflex Edges stop every drop from running in at the front.

Protector Hat, 75 cents

Satisfaction Guaranteed
Send for free catalog

A.J. TOWER CO.
BOSTON



The Old and Reliable Dr. Isaac Thompson's EYE WATER

is both a remedy for weak, inflamed eyes and an ideal eye wash. Keep your eyes well and they will help keep you.

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JOHN L. THOMPSON SONS & CO.
159 River St., Troy, N. Y.

happened if I wasn't there to see him catch that coon.'

"Si started out in hot pursuit of the three men, who were already half way across the field. In lieu of something better to do I ran along after him.

"We did not get back in half an hour. The tree in which the coon had taken refuge was large and knotty, and the task of felling it not easy; besides, the coon was strong and fierce when brought to bay, and there was a long and bitter struggle before Lije was victor.

"It was two hours later when we reached Si Bailey's house again, and the shadows of the sombre March evening were gathering thick around us. A single light gleamed in the kitchen window, and through the gloom I could see a horse and buggy standing just outside the gate. The men who had participated in the sport had accompanied us home, and the boisterous, noisy crowd filed into the yard in advance of Si, who stopped every little while to pat Lije affectionately on the head.

"The little girl with the broken shoestrings came out to meet us.

"Oh, pap," she moaned, 'mother's gone!'

"Si dropped the coon, which he had carried home, and staggered back.

"Gone!" he repeated.

"Dead," she sobbed. 'She left a goodbye for you.'

The light from the kitchen window fell athwart Si's white face as he stood there, gaunt and motionless. His lips twitched, but he made no sound.

"The voices of the men were hushed. Lije sniffed at the enemy he had vanquished. The little girl cried softly. Within the house all was very still."—New York Times.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Farina with Cream and Bananas
Friszled Beef Corn Muffins
Preserved Pears Coffee

Lunch or Supper

Vegetable Soup
Baked Rice with Cheese
Creamed Spinach
Apple Dumplings Tea

Dinner

Oyster Pie Carrots
Spiced Beans Hot Rolls
Mocha Cake Fresh Fruit
Coffee

Yankee Oyster Pie

Put one pint oysters, with their liquor, into deep baking dish; add one and one half tablespoons butter, and heat enough to melt butter. Stir in one tablespoon corn starch dissolved in one half cup cold water, salt and pepper to taste, and a dash of cayenne, also a tablespoon of lemon juice. Have ready a rather rich biscuit dough. Pat to half inch thickness the size of baking dish and lay on top of oysters. Bake until crust is done and lightly browned.

Mint-Glazed Carrots

Wash and scrape three carrots and cut in one-fourth inch slices. Parboil for ten or fifteen minutes, drain, put into a saucepan with one third cupful of chopped mint leaves. Cook very slowly until glazed, and perfectly tender. Serve hot as a border surrounding a mound of green peas.

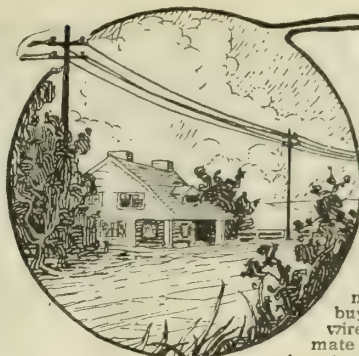
Spiced Beans

One quart of green beans, half cup vinegar, three-quarters of a cup of brown sugar, one teaspoon salt, one stick of cinnamon, 12 cloves, a small piece of fresh horseradish.

Remove strings from beans, leaving them whole. Cook in salted water until tender. Put sugar, vinegar and spices into a saucepan. Let come to a boil, cover and stand aside for half an hour. Add beans and boil for about three to five minutes, then let them stand for about half an hour before serving. They may be kept warm and served hot.

Prize Mocha Cake

Cream together three-quarters cup of sugar, one-quarter cup of butter, the beaten yolk of one egg and one-half saltspoon of salt; add one cup of flour (sifted) to which has been added two teaspoons of baking powder, then last add one cup of milk, one tablespoon cocoa and beaten white of one egg. Bake in two shallow pans.



The Modern Idea

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**The line is simple, easy to build
The telephone is easy to install
The cost is not excessive
The upkeep is small**

Especially are these things true, when reliable, made-to-last telephones are used. Each man can buy his own telephone, then decide upon the cost of wire, poles and supplies. We will tell you the approximate cost, what material is needed and show you how to put up the line free.

Co-operative farm lines are not a new idea. They are being operated in many parts of the world now. Very many thousands of Kellogg telephones are installed today—many in service for eight or ten years in all parts of the United States.

Kellogg Telephones

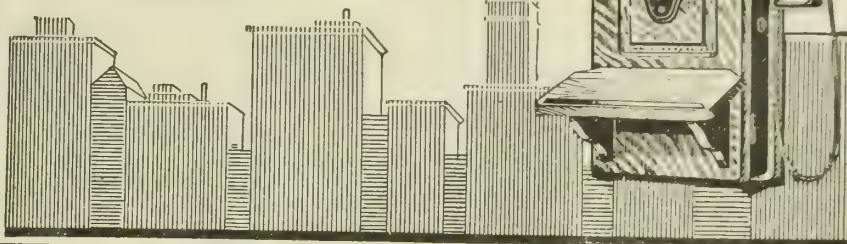
Kellogg farm telephones save you money because they are practical and well built, do not get out of order easily, give unexcelled transmission which means that the bells ring properly, that you can hear and be heard clearly and distinctly.

Ask our practical telephone men at San Francisco for our illustrated bulletins that tell in a plain, understandable way how our telephones operate and why they save money.

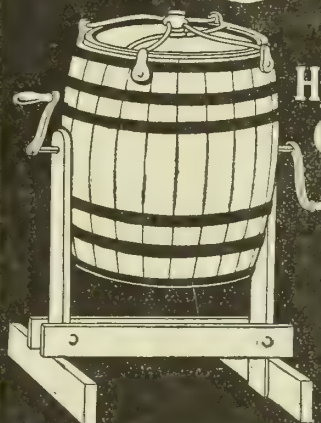
We will send you these bulletins and help you build your line in any way that we can. Tell us what you want and the conditions under which you will build your line. Write for bulletin 24.

Kellogg Switchboard and Supply Co.

Mission and Third Streets
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Clean with
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San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Oct. 13, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies14½
Arizona Longhorn17@17½
California Fresh15
Cheddar20@21
Domestic Swiss19@20
Eastern Daisy18½
Imported Swiss40
Longhorn17@17½
Oregon Triplets16@17
Tillamook16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts40
Candled42@44
Northern Fresh Extras, f. o. b. S. F.44

Prices to producers:
Hens, lb.13@17
Roosters, old9
Broilers, lb.21
Fryers16
Roasters, lb.16
Turkeys16@18
Ducks14
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7.00
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug60
Merced, cwt.1.75
Idaho Rurals1.00
Idaho Russets1.25@1.30

ONIONS

Wholesale selling price:
Boiling Onions, lug1.00
Pickling, lug1.25
Brown Globe, cwt.1.35
White Globe, lug85
Garlic12
Sets—
White, lb.8
Yellow, lb.7

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax5@5½
Limas5½@6
Green5½@6
Cabbage, sack1.25
Lb.1½@2
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.50@75
Chicory, doz.40
Chives, doz.1.00
Corn, lug55@60
Cucumbers, lug40@50
Pickling, lug1.00@1.50
Egg Plant, lb.3@3½
Escarole, doz.40
Horseradish, lb.15
Leeks, doz.40
Lettuce, doz.25
Mint, doz.40
Okra, lb.5@6
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone7½@8
Peppers—
Bells3¼@4
Chili, lb.3@3½
Pimientos, lb.6
Rhubarb—
Crimson Winter, box75
Strawberry1.00
Spinach, doz.20
Squash—
Crookneck, box40
Hubbard, lb.1½@2
Summer, lug40@45
Tomatoes—
Lug50@60
Turnips40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower75@1.00
Jonathans1.75@1.90
Pearmain, Red90@95
King Davids1.50@1.60
Spitzenberg1.20@1.35
Bananas, lb.4
Berries—
Strawberries, basket5@10
Blackberries, basket5@6
Raspberries, basket10@14
Cantaloupes—
Paul Rose, crate1.50
Columbia, large crate1.50
Persian2.25

Tip Top, small crate50
Casabas, crate1.50
Cranberries, bbl.9.50
Figs—
Black65@75
White65@75
Grapes—
Black Hamburg, lug70@85
Malagas, lug75@80
Morocco, lug1.00
Muscats, lug75@80
Concord, two-third crate1.10
Tokay, lug1.10
Cornichon, lug1.00
Red Emperor, lug1.00
Guavas, lb.6
Peaches—
Clings, box65@75
Freestones, lug85
Elbertas, lb.1½@2
Pears, Bartlett, packed box2.25
Prunes, Italian and German, lug1.50
Pineapples, lb.4
Pomegranates, lug1.00
Quinces, lug50@60
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons1.75@2.25
Juice Lemons1.25
Grapefruit, Seedless4.50
Limes, basket1.00
Valencias4.50@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes8@9
Apricots9@16
Peaches5@7
Pears, lb.11
Prunes, fancy pack7½@12¼

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	\$13.60
No. 2	12.00	10.60
Buds	20.00	17.00
Jumbos	18.50	16.60
See almond quotations by Association under San Francisco.		
Feanuts—		
California, Raw	5@6	
Japan	5½@6	
Eastern	7@7½	
Chinese	5	
Pecans	18	

HONEY

Wholesale selling price:
Comb, Fancy, Water White15@16
White15
Extracted Water White7½@8
White6½
Light Amber6
Beeswax25@26

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Limas5.25
Lady Washington5.25
Pinks4.50
Black Eyes4.50
Lentils12.50
Small White5.00
Garbanzos6.00

HAY

Prices to producer f. o. b. Los Angeles:
Barley13.00@15.00
Wheat Hay11.00@14.00
Tame Oat13.00@17.00
Alfalfa11.50@14.00
Volunteer6.00@8.00
Straw5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.10
Corn, White2.20
Wheat1.95@2.00
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.90
Kaoliangs1.50
Barley Seed1.55
Barley, Hulled1.90
Kaffir1.75
Milo1.65
Sunflower Seed7.00@7.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Alfalfa Meal1.20@2.10
Alfalfa Molasses, per cwt.1.25
Beef Scraps3.00@3.16
Beet Pulp1.20
Cracked Corn, cwt.2.45
Cracked Wheat, cwt.2.10
Cotton Seed Meal1.80
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.55
Rolled Oats1.80
Middlings1.90
O. & W. Middlings1.80
Feed Meal2.20
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Oct. 12, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras27
Prime Firsts24½
Firsts24

CHEESE

Wholesaler to retailer:
Young America17
California Flats14@16
New York Cheddar19
California Cheddar16½
Oregon Twins14½
Oregon Young America, fancy14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh, Extras44
Select Pullets38
Hens, lb.13@17
Fryers19@21
Broilers20@25
Roosters—
Young18@20
Old8@10
Squabs2.50@3.50
Turkeys17@25
Ducks10@13
Geese11@15
Belgian Hares—
Live Weight7@9
Dressed12½

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@8
Hogs4@6½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7@7½

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.25@1.45
Delta Burbanks, cwt.60@1.00
Sweets1.25@1.50

ONIONS

Wholesale selling price:
Onions, cwt.60@75
Garlic9@10

VEGETABLES

Wholesale selling price:
Artichokes, doz.20@35
Beans—
String, lb.2@3½
Limas, lb.3@3½
Wax, lb.2½@3
Celery, doz.15@30
Corn, sack1.25@1.75
Cucumbers, lug10@65
Egg Plant, lug25@40
Okra, lug40@65

Peppers—
Bell, box49@65
Chili, Mexican, lug35@50
Tomatoes, lug20@40

FRESH FRUIT

Wholesale selling price:

Apples—
Bellflower50@93
Newtown Pippins70@1.00
Jonathans60@1.00
Bananas, Hawaiian, bunch75@1.25
Blackberries, chest3.50@5.00
Cantaloupes—
Delta, lugs75@90
Turlock75@1.00
Casabas, crate50@75
Cranberries, Oregon, bu.2.75@3.00
Figs, box, black50@65
White30@55

Grapes—
Tokay, crate65@80
Malagas, crate60@65
Muscat, crate60@70
Isabella90@1.00
Seedless1.00@1.25
Wine Grapes, Zinfandel, ton.13.00@16.00
Wine Grapes, White, ton.10.00@12.00
Huckleberries, lb.5@7
Muskmcclons, box1.50@1.75
Peaches, box, wrapped35@50
Lug40@65
Pears, Bartlett1.00@1.50
Lake Co.1.70@2.25
Persimmons, box1.75@1.25
Pineapples, doz.1.25@1.75
Pomegranates, small boxes1.00@1.25
Quinces, box50@65
Raspberries, chest5.00@8.00
Strawberries, chest5.00@6.00
Watermelons, doz.1.00@2.25

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless2.50@4.00
Lemons1.50@2.75
Lemonettes1.25@1.75
Limes, Mex., cs.4.00@5.00
Valencias3.75@4.75

DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼c. All outside sections ¼c lower.
Other Fruits. Stand-ard. Choice Choice Fancy
50-lb. boxes 6¾c 7¾c 8¼c 9 c
Apricots3¼c 3½c 3¾c 4½c
Peaches7 c 8 c 9 c 10 c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¾c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5¼c; 4-crown, 6c.
The above prices are for October, November and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.

Nonpareil 14½c.
IXL 13c.
Ne Plus 12c.
Drake's 10½c.
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.60@4.70
Pink3.65@3.80
Black Eyes3.25@3.50
Cranberry4.15@4.25
Small White4.80@4.95
Garbanzos3.25@3.50
Large White4.60@4.75
Bayou4.35@4.50
Manchurian Speckled Bayous4.00@4.25
Red Mexican4.75@5.00
Red Kidney5.50@5.75
Horse Beans2.00@3.60

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White6½@7½
Light Amber4@5½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley10½@12½
Sonoma-Mendocino13½@15
Oregon-Washington13½@15

HAY

Under date of October 9, 1915, Seott, Wagner & Miller says:
Receipts for the past week were 2038 tons, the preceding week 2863 tons. The market is firm and has advanced throughout the entire lire during the week and although we quote the top of the market at \$17.00 occasional sales have been made as high as \$18.00, showing that choicer grades are in good demand and prices well maintained. Fancy red oat s seldom seen, No. 1 grade being the best that is offered. The usual export demand continues with occasional inquiries for large quantities for outside points. De-

WEATHER CONDITIONS

For the Week Ending October 9, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date
Eureka	.00	.37	2.08
Red Bluff	.00	.00	1.20
Sacramento	.00	.01	.60
San Francisco	.00	.01	.51
San Jose	.00	.04	.56
Fresno	.00	.00	.50
Independence	.00	.10	.46
San Luis Obispo	.00	.01	.67
Los Angeles	.00	.00	.16
San Diego	.00	.00	.16

Temperature Data

—Past Week—

	Maxi-mum	Mini-mum
Eureka	66	40
Red Bluff	90	54
Sacramento	92	52
San Francisco	84	48
San Jose	90	44
Fresno	94	52
Independence	88	44
San Luis Obispo	80	46
Los Angeles	84	54
San Diego	72	56

mand from country points continues good and much hay is being moved from warehouses in the interior to points that are short of hay. River alfalfa is very scarce and is selling at top quotations. Interior alfalfa is more plentiful but does not command the price of river. The straw market remains unchanged.

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt bales).....	16.00@17.00
No. 1 Wheat or Wheat and	
Oat	12.00@15.00
No. 2 Wheat or Wheat and	
Oat	10.00@11.50
Choice Tame Oat	14.00@15.00
Other Tame Oat	10.00@12.50
Wild Oat	8.00@10.50
Alfalfa	10.00@14.00
Stock Hay	6.00@8.00
No. 1 Barley Straw .....	.25@.40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.57 1/2 @ 1.60
Blue Stem	1.75 @ 1.80
Barley Feed	1.20 @ 1.25
Shipping and Brewing	1.25 @ 1.30
Corn, Eastern Yellow	1.55
Oats, Red, Feed	1.25 @ 1.35
Oats, Red, Seed	1.45 @ 1.50
Oats, White Feed	1.32 1/2 @ 1.35
Oats, Black, Feed	2.00 @ 2.25
Millet	2 1/2 @ 3
Rape	2 1/2
Flaxseed	5 @ 5 1/2
Rye	2.06 @ 2.25

FEED STUFF

Wholesale prices.

Alfalfa Meal, car lots.....	15.00@16.00
Bran, ton	26.00@27.00
Feed Cornmeal	40.00@41.00
Cracked Corn	40.00@41.00
Rolls Barley, ton	25.50@26.50
Middlings	30.00@32.00
Shorts	27.00@28.00
Oilcake Meal	37.50@39.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, October 13, 1915.

The orange market is a bit easier, owing in part to very heavy receipts of Jamaicas and Porto Ricos and rather liberal shipments from California. All told there are near to 300 cars weekly going forward. Prices are from 25 to perhaps 35 cents lower than a week ago.

Lemons are going forward under ventilation, regular 300 size is holding up to full quotations but 360s and other off sizes are being shaded somewhat.

NEW YORK, Oct. 11.—Eighteen cars Valencia, four cars lemons sold. Market unchanged on oranges; lemons slightly higher on both 300s and 360s. Weather fair.

VALENCIAS—

Old Mission, xl., Chapman	5.60
Old Mission, fy., Chapman	5.60
Golden Eagle, Chapman	4.60
Lady Rowena, Chapman	2.90
Stock Label, Chapman	2.20
Olive Heights, Growers Ft. Co.	4.50
Angeles, Growers Ft. Co.	3.75
Big Four, Growers Ft. Co.	3.30
Old Mission, xl., Chapman	6.40
Old Mission, fy., Chapman	5.60
Golden Eagle, Chapman	4.60
Lady Rowena, Chapman	3.15
Stock Label, Chapman	2.40
Tesoro Rancho, Blue	4.35
Tesoro Rancho, Red	4.35
Ruby	3.75
Robin Hood, Or. Ex.	6.10
Wm. Tell, Or. Ex.	5.20
Golden Beaver, Or. Ex.	4.30
Glendora Heights, A.C.G. Ex. xl.	5.60
Glendora Heights, Foothill	4.50
Evolution, A.C.G. Ex.	4.00
Nonpareil, Covina Ex.	4.55
Daisy, Covina Ex.	4.25
Cal. Belle, S.T. Ex.	6.40
Carmencita, S.T. Ex.	4.60
Colombo, S.T. Ex.	3.40
Las Palmas, S.T. Ex.	3.40
Atlas, Or. Ex.	4.65
Hector, Or. Ex.	4.35
Charter Oak, S.D. Ex.	5.00
Red Ridinghood, S.D. Ex.	4.25
Glendora Alps, A.C.G. Ex.	5.30
Glendora Home, A.C.G. Ex.	5.30
Monopole, A.C.G. Ex.	3.10
Gold Band, A.C.G. Ex.	2.70
Wm. Tell, Or. Ex.	5.35
Golden Beaver, Or. Ex.	4.35
Glendora Heights, Foothill	4.75
Evolution, A.C.G. Ex.	4.05
Geo. Washington, Or. Ex.	4.80
Martha Washington, Or. Ex.	4.35
Cowboy, Or. Ex.	3.85
La Vista, Or. Ex.	4.10
Alta Loma, O.K. Ex.	4.20
Red Spray, O.K. Ex.	3.65
Owl, O.K. Ex.	3.15
Black Crusader, A.C.G. Ex.	4.30
Green Crusader, A.C.G. Ex.	3.50
Golden Fleece, A.C.G. Ex.	3.05
Hunter, A.C.G. Ex.	3.60
Shamrock, Placentia, M.O.A.	4.65
Caledonia, Placentia, M.O.A.	4.25
Albion, Placentia, M.O.A.	3.75
De Luxe, Covina Hgts. Groves	4.40
Outlook, Covina Hgts. Groves	3.95
VALENCIAS—HALVES—	
Red Ridinghood	2.10
Hesperides	1.65
LEMONS—	
N.W.B. Selected, ventilated.....	\$3.95
Loma, ventilated	3.30
Limoneira Co. Selected, ventilated..	3.40
Loma, ventilated	3.15
Greyhound, ventilated	3.15
Panama, ventilated	3.00

PITTSBURGH, Oct. 11.—Three cars

sold. Market steady on Valencias; lower on lemons.

VALENCIAS—

La Vista, Or. Ex.	\$3.75
Hill, Or. Ex.	3.30
Golden Circle, R.H. Ex.	3.50
Palm Tree, A.H. Ex.	3.10
Commercial	2.30

ST. LOUIS, Oct. 11.—Four cars sold.

Market is easier.

VALENCIAS—

Copa de Oro, Or. Ex.	\$3.60
Transcontinental, Or. Ex.	4.05
Goldfinch, Or. Ex.	3.95
El Modena, Or. Ex.	3.55
Searchlight, Or. Ex.	4.00
S.S. Brand, Or. Ex.	3.55

LEMONS—

Pico, S.T. Ex.	\$2.20
Palm Tree, A.H. Ex.	1.70
Commercial .....	.95

PHILADELPHIA, Oct. 11.—Five cars sold.

Market is unchanged on Valencias, lower on lemons.

VALENCIAS—

XLO, Or. Ex.	\$4.20
Foothill Beauties, Or. Ex.	3.45
Copa de Oro, Or. Ex.	3.65
Transcontinental, Or. Ex.	4.60
Goldfinch, Or. Ex.	4.10
El Modena, Or. Ex.	4.00
Atlas, Or. Ex.	4.35
Hector, Or. Ex.	4.25
Trojan, Or. Ex.	4.35

LEMONS—

Radio, L.G., F.G.A.	\$3.35
Wireless	2.95
Sunside, S.P. Assn.	2.70

CINCINNATI, Oct. 11.—Four cars sold.

Market is steady.

VALENCIAS—

Caledonia, Placentia M.O.A.	\$3.55
Liberty	3.55
Valley	4.05
Possum, A.C.G. Ex.	3.60
Hunter, A.C.G. Ex.	4.10
California, A.C.G. Ex.	3.55
Golden Fleece, A.C.G. Ex.	3.55

CLEVELAND, Oct. 11.—Four cars sold.

Market lower on both oranges and lemons.

VALENCIAS—

Mars, Amer. Ft. Dis.	\$3.75
Jupiter, Amer. Ft. Dis.	3.45
Caledonia, Amer. Ft. Dis.	3.25
Toltec, S.T. Ex.	4.60
Stella, S.T. Ex.	4.05

LEMONS—

Canyon, A.C.G. Ex.	\$2.50
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BOSTON, Oct. 11.—Seven cars sold.

Market steady on both oranges and lemons.

LEMONS—

Cornet	\$2.80
Alpine	1.60
Whittier, S.T. Ex.	3.35
Pico, S.T. Ex.	3.05

VALENCIAS—

Colombo, S.T. Ex.	\$4.25
Las Palmas, S.T. Ex.	3.70
Portola, S.T. Ex.	3.55
Red C, Covina Ex.	5.25
Cougar, Covina Ex.	4.20
White C, Covina Ex.	3.15
Wm. Tell, Or. Ex.	5.50
Golden Beaver, Or. Ex.	5.05
Kenilworth, A.H. Ex.	5.75
Peasant, A.H. Ex.	4.85

CHICAGO, Oct. 11.—Arrivals of oranges are heavier, owing to weaker conditions of the Eastern market, and prices are shaded off a trifle; boxes, fancy California Valencias, 5.50@5.75; choice but off-size, 5.00@5.50. Lemons, boxes, fancy California, 3.50@3.75; choice, 3.00@3.25. Pears, boxes, 50 pounds, Beurre Bosc, 3.25@3.50; Howells, 3.00@3.25; Clairgeau, 2.25@2.50; Beurre d'Anjou, 3.00@3.25; Winter Nelis, 2.00@2.50. Plums, cases, four baskets, Hungarian, 1.25@1.50; Silver Egg, 75¢ @ 85¢; Italian, 65¢@80¢. Grapes, cases, 4 baskets, seedless, 1.00@1.15; Malaga, 85¢ @ 1.10; Tokay, 70¢@1.00. Cantaloupes, standard cases, California fancy, 2.50@2.75; common, 50¢@75¢; pony, flat cases, California fancy, 1.50@1.75. Casabos, flat cases, California, 1.00. Apples, boxes, Western stock, 1.75@3.00.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Inheritance Tax

Do the laws of this state governing inheritance tax exempt property willed by husband to wife or reverse? If not, what is the rate of taxation? If part of the mortgage notes are held by wife and part by husband would all of them be considered property of the husband in case of his death? Does property, real estate, bank account, mortgages, come under the California inheritance tax law when held in other states if testator at time of her death is living in this state? If within a year previous to her death she has deeded property to her son will that be included in the taxable list?—Subscriber, San Diego.

In case of widow \$24,000 is exempt from taxation; in the case of the widower \$10,000. Up to \$25,000 the tax is one per cent in both cases and then gradually increases in percentage. If a mortgage was made out payable to the wife it certainly would not be a part of her husband's estate unless afterwards proven to be. When a transfer is by will or by the laws of succession in this state tax is imposed upon any resident dying possessed of property while a resident of the state. When a transfer of property is made by a resident or non-resident, when such non-resident's property is within this state, without valuable consideration in contemplation of death or intent to take effect after death, such property is subject to the tax as though transfer had not been made.

Naturalization

I am a Frenchman, 38 years of age and have been in California for over a year, and wish to settle in this country and become an American citizen. Would you tell me how I am to set about it? How long must I remain in America before I become a citizen?—Subscriber, Porterville.

In order to become naturalized the applicant must first make an oath before the clerk of the court that he has an intention to be a citizen of the United States and that he desires to renounce allegiance to the state of which he was a citizen. Blanks are provided for the purpose of filling out the details in the office of the clerk of the superior court of any county wherein you may be located or in the office of the district court of the United States. Not less than two nor more than seven years after such declaration of intention he must file in duplicate a petition duly verified, stating a number of details as to his previous life and further that it is his intention to reside permanently within the United States. This petition must also be accompanied by affidavits of two witnesses or citizens of the United States. This petition must show that these witnesses have personally known the applicant to be a resident of the United States continuously for at least five years and of the district in which the affidavit is made at least one year, immediately preceding the filing of the petition and further that the petitioner is of good moral character. A certificate must also be obtained from the department of commerce and labor, if a petitioner has arrived within the United States subsequent to the 29th day of June, 1906, which certificate must state the date, place and manner of arrival in the United States and also the date of filing of the declaration of intention to become a citizen. Thereafter the applicant appears in open court and declares upon oath that he will support the constitution of the United States and absolutely renounce his allegiance to the foreign state. At that time in open court he is subject to an examination as to his qualifications for citizenship, and he must have his two witnesses there with him. No alien may be naturalized, who does not believe in organized government, who is an anarchist, who cannot speak the English language or believes in polygamy. At the time of filing the original declaration of intention the clerk is entitled to fee of \$1, upon the petition for admission as citizen; if the certificate of citizenship is granted the clerk is entitled to \$2; also sums must be paid to cover expenses of subpoenaing and paying witnesses. If after having secured a certificate of citizenship the alien goes to any foreign country and takes permanent residence therein, the certificate of citizenship may be cancelled.

Collecting Wages

What can I do to collect wages that are due me for over 15 months, when it is doubtful if I can find anything to attach? Is a commission man committing a criminal offense when he sold a carload of hay for me last spring and received the money for it, but does not pay me but a very small part? He promises to pay. What action would be best for me to take to secure the money?—Subscriber, Aipaugh.

As to the first matter you might take it up with the labor commissioner for your district, but it is doubtful if after waiting for so long you could

obtain anything except civil relief. As to the second point it will probably depend entirely upon the exact circumstances as to whether embezzlement had been committed or not.

Title

Two years after marriage a man deeds his home to his wife. All cash paid out on it after marriage was money she had earned before marriage. Years afterward she leaves him for immoral conduct, taking the only child with her, asking neither alimony nor divorce and making her home with her parents in California. The home in Florida has little value now, but can she sell it without the husband's consent or signature, neither having lived on it for years?—Subscriber.

It is doubtful if under the laws of Florida a deed by the wife alone would be sufficient in itself to convey good title, although under the circumstances, as stated, a judgment could be obtained quieting the title in the property.

Wife's Property

Under California laws, if a woman's father gives her a home here at his death does her husband have any share in it whatever? Can he come and live in it against her will or have any claim on it at her death? Can she give it wholly to her child?—Subscriber.

The home stated would be the separate property of the wife over which she would have absolute control either to sell or will.

Surrendering Receipts

I bought some property on contract, deed to be furnished by selling company when last payment had been made. When all payments had been made and "Receipt in Full" issued, the selling company had the deed made out as per contract but refuse to deliver it until I surrender to them all my receipts for the payments I have made. Part of the receipts are endorsed on the back of my copy of the contract and part are on separate forms. Is it customary to require the purchaser to surrender his receipts? How can I compel them to live up to their part of the agreement and furnish the deed? There is nothing said in the contract as to the surrender of either the receipts or of the copy of contract which I have. Contract was made out in duplicate, each party holding one copy.—Subscriber.

Legally the company undoubtedly has no right to require the return of the receipts, nor is it customary for the purchaser to surrender his receipts. You could bring suit against the company and undoubtedly procure a judgment requiring it to furnish the deed, but I doubt not but that it would be more diplomatic and considerably less expensive to surrender your receipts, at which time you might request a receipt for the receipts surrendered and thus get your deed with no expense or trouble.

ALFALFA COVER CROP

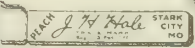
I notice in a recent Cultivator that some recommend planting alfalfa in lieu of other cover crop in orchards. I suggest that this is a dangerous thing to do unless it is fully intended to plow it within a year, for any cover crop that is allowed to remain two or three years will invite the fibrous roots or feeders of the trees to the surface of the ground. When the orchard is plowed these fibers are destroyed, which is necessarily a great shock to the health of the tree. I destroyed an old apple orchard and I have seen a lemon orchard at La Canada killed by this method. We have had reports from others who have greatly injured their orchards by plowing a two or three-year-old sod. This is reasonable and we believe your correspondents who recommend sowing alfalfa for a cover crop should be cautioned not to let it stand too long.—H. L. Musser, Aggeler & Musser Seed Co.

BULBS

The Morris & Snow Seed Company of 439 S. Main Street, Los Angeles, is issuing its catalog of fall bulbs and tuberous-rooted plants. The booklet gives cultural directions for California and is intended as a planting guide as well as a list of bulbs for sale by the seed company. It has a fund of valuable information and we doubt not it will be mailed upon request.

Caution!

Genuine J. H. Hale peach trees can be obtained **only** from Wm. P. Stark Nurseries, Stark City, Mo. Look for trade-marked wooden tag with Mr. Hale's personal signature as below.



Send for Catalog—Read the Whole Story

On July 22, 1915, Mr. Hale packed an ordinary apple barrel full of J. H. Hale peaches in his Fort Valley, Ga. orchards and shipped them to Stark City, Mo. by express. After traveling 1,000 miles, without ice, without ventilation, in the heat of summer, they arrived as firm as when they left the orchard—only two bruised peaches in the lot. A record no other peach has ever equalled. Read full facts in catalog. Mailed Free.



An Amazing Test—J. H. Hale Peaches Shipped in a Barrel!

A Peach So Solid and Firm It Won't "Squash Down"—Yet Fine, Juicy Flesh—Luscious Flavor—Immense Size—Highest Prices for Fresh Fruit—Ideal Canner

Wonderful Keeper

The J. H. Hale is the peach that annihilates distance. Ship it thousands of miles—it keeps for days—the dealer has time to sell without waste. This means more sales, bigger profits. And its size, coloring, quality and flavor bring **double** ordinary peach prices on the market. Hon. Parker Earle, of Pasadena, kept J. H. Hale peaches 12 days after they had traveled 4,000 miles in the temperature of an express car. They have been sent by Parcel Post from Connecticut to California, back to Connecticut and then to Missouri, and arrived in marketable condition.

For Canning

Sold fresh, the J. H. Hale always tops the market. Yet its heavy, dense, sweet flesh, coupled with its large size, make it the superb commercial peach. For canning it gives a clear, brilliant syrup, holds its round shape, doesn't rag out, and retains the delicious natural flavor. You have **all** the most desirable features in the J. H. Hale. That is why it is proving the greatest money-maker ever introduced in peaches.

What California Growers Say

"Harvested my crop of J. H. Hales. They exceed your ad. in quality and color."—P. Jordan, Los Angeles Co. "The J. H. Hale is king of the peach world. Our trees were loaded. We picked as many as 300 peaches off some trees. Fine flavor, many so large I couldn't get them in a jar with a 3¼ inch opening."—F. G. Baker, Los Angeles Co. "The J. H. Hale are just as you represented."—Charles Torrance, Humboldt Co. "When my J. H. Hales were ripe they were a beautiful sight, large, fine, well colored, fine flavor."—J. E. Redden, Los Angeles Co. "All that is claimed for them, firm as a cling, but much better; finer flavor than Crawfords."—L. L. Cronk, San Bernardino Co. "A flavor our California peaches do not have."—Bensel Smythe, Publisher "Western Empire."

Send for New Free Book—Save ⅓ to ½

We save you money on your tree purchases because you do business direct with the nursery. No agents, no canvassers. Our catalog is our only representative. Gives complete J. H. Hale story, all about Early Rose Peach, Delicious apple—also lists all best apple, peach, pear, plum, cherry, grape, bush-fruits, strawberries, roses, ornamentals, etc. Prices in plain figures. Easy to order from. Our trees pass most rigid inspection laws. Safe arrival guaranteed. Write or use coupon today.

William P. Stark Nurseries
Box 633 Stark City, Mo.

\$1420 Per Acre

From one measured acre, Mr. Hale picked 748 bushels of J. H. Hale peaches, over 95% of the fruit being merchantable, selling f. o. b. farm for \$2.00 to \$2.50 per bushel—a return of \$1420. In car-load shipments, the J. H. Hale peaches **netted him \$380 MORE per car** than Elbertas. Why waste time with uncertain profit-producers when you can get a money-maker like this?

Reserve Your Trees Now

This year our increased volume enables us to quote considerably lower prices on J. H. Hale trees. This together with tremendous interest aroused by its performance in every peach section of the country points to an overwhelming demand. Get your order in early. Write for catalog today. Don't wait until our J. H. Hale trees are all gone.

Another Great Peach—"The Early Rose"

The highest quality in early peaches. Rich, rosy red, wonderfully flavored, and with a peachy fragrance that sold the Southern grown Early Rose in New York for \$3.00 to \$3.50 per crate. More profit than any other peach of its season. Fully described in catalog.

Genuine Delicious Apple—Growers Prices

The national dessert apple, delightfully crisp, aromatic flesh, with an alluring flavor, rightly termed "Delicious." The prime favorite on Pacific Coast. Genuine Delicious apple trees, William P. Stark grown, at lowest direct-from-nursery prices.



Hon. Parker Earle of Pasadena and J. H. Hale Peach Tree

With his associates, the Redlands Heights Ranch Co., Mr. Earle has planted 15,000 J. H. Hale trees near Redlands. He says: "The beauty of the J. H. Hale is, after it has developed sugar and quality it will hold that quality twice as long as any other peach I know. It would go to European markets from California if packed right."

WILLIAM P. STARK NURSERIES

Box 633 Stark City, Missouri

Please mail me your 160-page catalog. I am interested in

- | | |
|---|--|
| <input type="checkbox"/> J. H. Hale Peach | <input type="checkbox"/> Delicious Apple |
| <input type="checkbox"/> Apples | <input type="checkbox"/> Plums |
| <input type="checkbox"/> Peaches | <input type="checkbox"/> Cherries |
| <input type="checkbox"/> Pears | <input type="checkbox"/> Bush Fruits |
| | <input type="checkbox"/> Roses |
| | <input type="checkbox"/> Grapes |
| | <input type="checkbox"/> Strawberries |

Approximate Number of Trees Desired.

Name _____

Address _____

CALIFORNIA CULTIVATOR

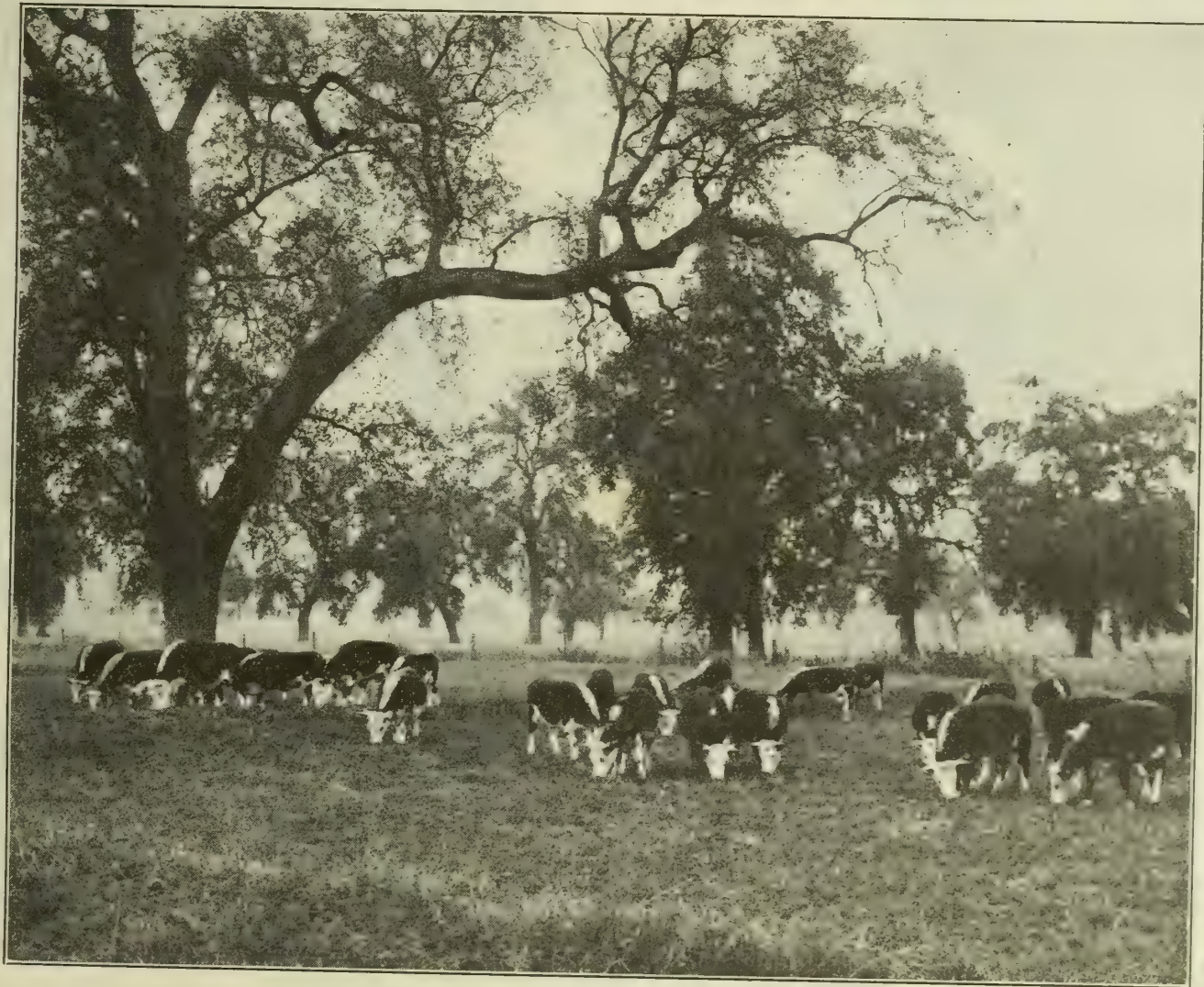
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

October 21, 1915

SAN FRANCISCO



Tehama County Purebred Herefords

Just Off the Press

Our New Book

The Garden Beautiful in California

By



Ernest Branton

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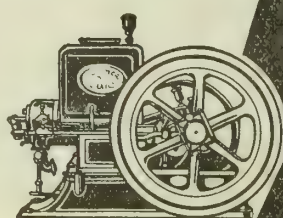
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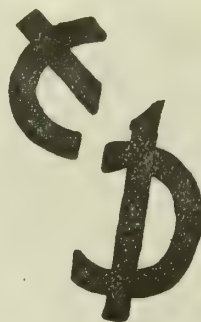
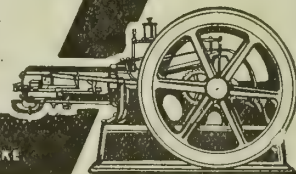
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Rural Californian combined with California Cultivator

Vol. XLV No. 17

LOS ANGELES: THURSDAY, OCTOBER 21, 1915

One Dollar Yearly

Another Lively Auction of Pure Breds

Hanford, Kings County, is the Site of a Sale of Pure Bred Holsteins from Seven Herds in All Parts of California. McAlister Manages and Rhoades Auctions Successful Sale

SIXTEEN fifty I am offered, who will make it \$1700? This is the very best offering of this sale. Gee Whillikens, it's a crime for such an animal to go at such a low price. It's tough luck but the next bid is sure to take her." And it did, for the next bid was \$1700, made by McAlister & Son for the topnotcher at the Hanford sale. The animal was Wisconsin Daisy of Sleepy Hollow, consigned to the sale by C. C. Lester of Gilroy. The

scene was thrilling indeed. The crowd on the bleachers had risen to its feet and when this magnificent cow was brought into the ring the large number of live stock people who attended the sale was immediately at attention. A moment later four descendants of the cow were brought alongside and it was a beautiful sight which called for immediate applause. When the youngsters were taken from the ring the bidding began at \$600. It went to seven hundred dollars, eight, nine, one thousand, eleven hundred, twelve hundred in one-hundred dollar jumps, and almost as quickly as the reader has run over the same figures. Then the bidding was slower and went by fifties, but steadily upward until seventeen hundred was reached and the top notch sale was made. This topped by \$150 the best sale of a female at Sacramento the week preceding. The average of this sale did not reach, however, that of Sacramento, partly because of the large number of calves and young bulls. The total received for this mother and her four offspring—one of them under three weeks of age—was \$5465. Could there be a stronger argument in favor of pure bred productive animals? Had these all been grades or "stronger constitutioned" animals (so called by some) they would perhaps have brought nearer \$546 than \$5465, or an average of over \$1000 apiece.

There were 163 head sold at the two-days' sale. The total for both days was \$48,120, or an average of \$295. The weather was magnificent and the attendance was exceptionally good. The consignments were made by McAlister & Son, of Chino; C. C. Lester, Gilroy; R. F. Guerin, Visalia; Hewitt & Hewitt, Hardwick; Alex Whaley, Tulare; E. O. Fawcett, El Monte; W. J. Higdon, Tulare.

The sale began soon after nine o'clock Thursday morning and closed at 3 p. m. Friday, everybody feeling

that it had been a very successful sale. A dozen or more young bulls selling very cheaply brought down the average which would otherwise have been much larger.

The auctioneer, Col. Ben A. Rhoades, proved his ability to handle a large number of stock in a very short time and at the same time do justice to both sides. The feeling generally prevailed that the sale was one which was very fair to both buyer and seller. The owners of dairies which are stocked with grade cows took advantage of this sale to buy young pure bred bulls for raising the standard of their dairies. This is an opportunity due partly to financial conditions and every dairyman in the country should take advantage of it and make his stock increase in value with every generation.

Morris & Son. Beryl Wayne Artis, Nydia Creamcup 2d., Matty of Riverside, Zaza Tuebie Prophetess, Mademoiselle Korndyke Garibaldi 2d, Princess Juliana De Kol Garibaldi, Princess Juliana De Kol Mechthilde, Empress Tubie Pontiac, Copa De Ora Fay Spotwood 2d.

Clinton Campbell. Lady Robina De Kol, Janie Piebe Myers.

C. M. Faris. Bertha Princess Lehi, Lorena Hartog Burke, Lady Artis Butter Boy, Ormsby Creamelle De Kol 2d.

Tagus Ranch. Marguerite Lad Netherland Pride 2d., Barbara Johanna 2d., Adriaantje Pauline Colantha 2d., Beatrice Star of Mountain View, Rouble De Kol Edna 3d., Henrietta Colantha Piebe, Daisy Ornot, Susan Ormsby 2d., El Prado Mercedes, Pauline Princess De Kol 2d., Cathilda Bertha, De Bawn Queen of Scot, Mollie De Kol Glasgow, Pauline De Kol Kakenstein, Daisy Moonlight, Union Karen, Rouble De Kol Florence 2d., Frau Colantha Queen Mechthilde, Duplicate Muttertrude De Kol, Robina Paul De Kol, Johanna Belle Barbeta, Barbette Beryl, Lady Maynard Hengerveld, Mercy El Prado, Mercedes Colantha Aaggie, La Reina Hartog Hengerveld, Diana Queen of Mountain View, Emeline of Bloom 2d., Segis Pietertje Beryl, S. VI Anna Vestner,

Pet Riverside of Tuolumne, Emperor Lassie De Kol, Rosina Gamp, Sir Holland Gamp, Lady Parthenia Paul.

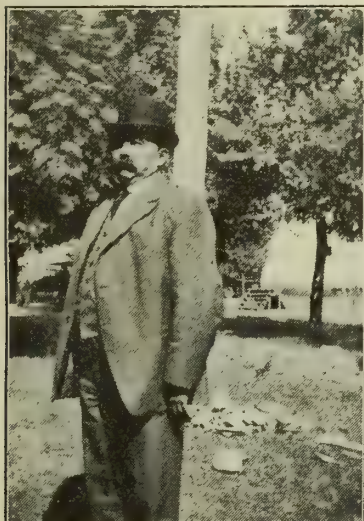
McAlister & Son. Colantha Aaggie, Wisconsin Daisy of Sleepy Hollow.

T. D. Ross. Matty of Sunnyside, Copa De Ora Holland Bawn.

F. M. Helm. King Segis Pontiac Emperor 3d., Margaret De Kol Piebe 2d., Athenia Jewel Roderick, Piebe Wild Athenia, Roderick Netherland 2d.

J. McGillivray. Colantha of Sleepy Hollow 2d., Cantate Pieterje of Sleepy

Continued on Page 407



Wm. Bishop of Chimaquam, Washington Lower, George A. Smith of Corcoran, Telling C. A. Briggs of the Cultivator Staff That the Cultivator is Simply One of the Finest "Pullers" in the World.



A Healthy Infant, Granddaughter of Wisconsin Daisy of Sleepy Hollow, Less Than Three Weeks of Age, Sold at \$290 at the Recent Consignment Sale at Hanford, One of the Best Sales for so Young a Heifer Made on the Pacific Coast.



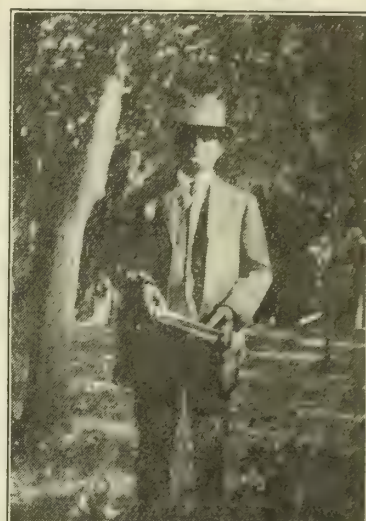
R. F. Guerin, One of the Consignors



J. W. McAlister of McAlister & Sons



Wisconsin Daisy of Sleepy Hollow, Who Broke the Record as to Average Prices Received for Cow and Offspring in This State. She with Four Daughters and Granddaughters Commanded \$5465. Mr. Lester, the Former Owner, is Holding the Halter.



Upper, Mr. A. J. Stalder of Riverside Ranch, Purchased a Car of Pure Breds. Lower Picture Shows a Consultation Between Mr. Hewitt, of the Hewitt & Hewitt Ranch, and A. W. Morris.



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TREATMENT OF FROST PROTECTION EQUIPMENT

By R. S. Vaile



FOLLOWING the severe freeze of January, 1913, a large amount of money was invested by citrus growers in frost protection equipment of various sorts. This investment varied from \$30 to \$150 per acre for pots alone. Depreciation of these pots figured at ten per cent gives a direct charge of from three dollars to \$15 per acre. In a period like the past year economy is necessary in every business—it would seem natural for every effort to be made to hold depreciation charges at a normal point. This principle has apparently been disregarded in large measure with smudge pots. The writer has seen large numbers of pots in every district that have rusted tremendously during the past two seasons. Examination was made of 100 pots piled along the side of one orchard, among which 35 were found with holes rusted through. These pots were but two years old. There was an actual depreciation of 35 per cent the second year. How large it had been the first year we do not know, but there is no reason to believe it will

not be fully as high the third with the same treatment.

One of the worst features in this connection is the tendency to not replace equipment that has depreciated in this way. We feel that each year should see a larger area protected but at the present rate in another five years the industry will be no better prepared to cope with a severe freeze than it was three years ago.

One important reason for the lack of attention to this equipment seems to be the lack of knowledge of how to go about the matter. Various paints and waterproof materials have been suggested with which the pots might be dipped. We have made observations of large numbers of these materials and find that none of them have given absolute satisfaction. The best thing that we have seen is fortunately one of the cheapest; namely, pure asphalt applied hot. We have in mind one set of smudge pots which were dipped in hot asphalt over three years ago and have not been redipped since, that seem to be in perfect condition. These pots have been left in the orchard during that entire time filled with oil and out of 125, not one has yet leaked. One could not hope for as good results as this in all cases, and even with the asphalt treatment we feel that some re-treatment should be given every season.

The writer recently observed a method of preparing and dipping pots which he believes is worth the attention of citrus growers in general. It consists briefly of the following operations.

Heating to melt the old coating on the pot. This was done by holding the empty pot over a burning pot. A rack was built above the flame for this purpose and tongs were used to turn the pots until all parts were heated.

Wiping the pot to remove the old coating which was melted. This was done with old pieces of burlap. Where necessary, a putty knife or other piece of steel was used to scrape out small rust pockets.

Dipping the bottom and sides of pot in the hot asphalt. For the purpose of melting the asphalt the ordinary stock feed stove, No. 20, which retails for about \$20 was used. Either wood or coal can be burned in such stoves, giving a cheap, safe and convenient method for keeping the asphalt melted.

As the pot is lifted out of the asphalt a full sheet of newspaper is placed on the bottom and the edges turned up along the sides of the pot to hold the asphalt in position until it is dry. In this way the pot can immediately be placed on the ground in position for refilling or stacked away.

The cost of cleaning and dipping the bowl of the pots in the case observed was, for material and labor complete, a little less than four cents a pot. The treatment of the top of the pot can probably be handled more quickly and cheaply by using some good asphalt paint with a brush. The treatment of the tops in this way would probably cost about three cents more.

In the use of smudge pots one should so plan the work whenever pos-

sible, that the pots will never be burned entirely to the bottom. If one pot to each tree is provided it will usually be possible to rotate the use of the pots so that they are never burned lower than within two inches of the bottom. This seems to be a very important feature in the life of the equipment.

RYE STOPS WASHING.

By M. F. Miller,
Missouri College of Agriculture

The heavy rains of the last summer have shown the great injury to land which may be brought about through soil washing. Unfortunately this washing will continue during the fall and winter on all rolling lands which are left bare. Stack fields are especially subject to fall and winter erosion, and there is much of this land every year which is allowed to stand untouched during the fall and winter. Efforts should be made to sow some cover crop on such land where possible. The use of cover crops is one of those principles of soil conservation which farmers on rolling lands must learn to practice.

Rye is undoubtedly the best cover crop for Missouri conditions, as shown by the experience of the Missouri agricultural experiment station. The man who has never used rye to prevent washing will be surprised at the way in which its roots hold the soil. Even half a bushel of rye sown broadcast and harrowed in during September will give striking effects, although a bushel or a bushel and a half is better. The pasture received from such a crop will pay well for the seed and labor, so that the prevention of soil washing costs practically nothing.

Wheat and barley give an effect similar to that of rye, and the pasture secured is practically as good, but for average conditions rye is to be preferred. Rye is somewhat hardier than either wheat or barley and may be sown somewhat later if wanted only for soil binding.

THE BEST ORCHARD INTERCROP

Written for California Cultivator.

One of the biggest problems that confronts the man who is planting a young orchard, or contemplates doing so, is the selection of a crop for planting between the trees during the first three or four years, that will return the greatest possible cash return to help pay the expense of care and cultivation, and one that will, if possible, be a benefit because of its aid in making better physical condition of the soil and that will add nitrogen to the store already available.

Many different crops have been planted this year. These have been the different varieties of beans, corn, alfalfa, Sudan grass, etc.

What has the experience of the season to teach? We would like to hear from our readers who have had experience. What is the best crop?

CALIFORNIA AHUACATE ASSOCIATION

The California Ahuacate Association announces the following program for its meeting on Saturday, October 23, 1915, at the Hotel Alexandria, Los Angeles:

Educating the Public, Judge Chas. Silent, Glendora; News Items, Prof. I. J. Condit, University of California; Food Value of Avocado, Prof. M. E. Jaffa, University of California; Avocado in Florida and Other Lands, Wilson Popenoe, United States department of agriculture; Dr. J. Eliot Coit, University of California; Varieties, F.



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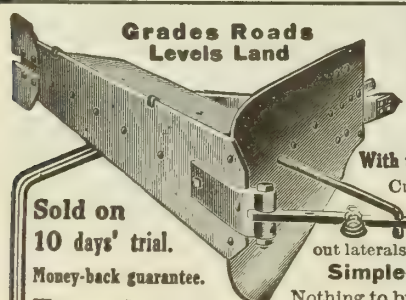
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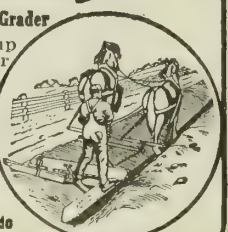
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O. Popenoe, Altadena; Station Work for the Avocado, Dr. H. J. Webber, director citrus experiment station, Riverside; Things to Be Looked Out For, C. P. Taft, Orange; Foreign Contributions to American Avocado Growing, David Fairchild, department of agriculture; Marketing, E. B. Rivers; Marketing from Mexico, J. C. Bosche, Los Angeles; The Association and Its Purposes, Edwin G. Hart, President California Ahuacate Association, Los Angeles.

Experiments on the extraction of commercial oil from the avocado are being conducted by the University of California at Berkeley, and the University of Southern California. The ahuate association in conjunction with the University of California, has shipped different varieties to Washington, D. C., and Chicago, which will be returned in time to be opened at this meeting. There will be general discussion of papers and items of interest after the afternoon session. An invitation to be present is extended to everyone interested in the ahuate.

The committee in charge of arrangements wants to get in touch with every grower and nurseryman who has fruit or trees suitable for exhibition. Address California Ahuate Association, 917-923 Union Oil Building, Los Angeles. Mr. F. O. Popenoe has charge of the exhibits.

AVOCADO-AHUACATE-ALLIGATOR PEAR

Written for the California Cultivator
By Chas. D. Adams

We are at present in the early and formative period of the introduction, propagation and marketing of a fruit product of great value which we believe as it becomes known will come into the same general use among our own people as it has in those countries where it is native and where it has been grown for centuries.

While it is of tropical origin and until recently was thought could only be grown successfully in such countries, we have now discovered to the contrary, not by theory but by actual practice. We are doing it right here and find we can grow this fruit to perfection in Southern California and Southern Florida. We are now starting out in an industry that has every promise of ranking in the future along side the citrus industry in these states. The American market has possibilities that are surely big enough for the growers of both states and if we are wise we will follow the example set for us by the citrus growers and will not disturb ourselves with questions of rivalry, but rather will combine in efforts to work together for the common good. This the citrus growers have done. The California Fruit Growers' Exchange welcomed a large delegation from Florida when they came here to learn about our cooperative methods, gave them all information possible, even letting them take some of our experienced men to Florida to help them organize on similar lines and to the mutual benefit of growers, both here and there, by great reductions of decay in transit and prevention of demoralized markets.

Let us not set out on an opposite course of action in the beginning of a great industry for both these states. Let us not bring in an element of discord in the question of a name by endeavoring on theoretical grounds to antagonize Florida, the American Pomological Society and, as I sincerely believe, the majority of our own growers. If we do, the only result will be, I am

sure from similar past experiences, that we will not be successful in obtaining the general use of either avocado or ahuate, but will be forced to see our beautiful fruit masquerade under the suggestions of alligator, and of pear, to neither of which it is kin.

English speaking people will not adopt and use the word ahuate, which only those who understand Spanish spelling would know how to pronounce. Avocado they can pronounce according to the spelling, whether quite correctly or not does not signify, so long as it is a word they can and will use.

Let us apply here again the experience of our citrus friends. They made a failure in trying to get rid of the name grapefruit in favor of the much more desirable name pomelo. In this case there was a united attempt on the part of the Pomological Society and of growers' associations and nurserymen, but it came too late. The stamping of the name pomelo on boxes and its printing on letter heads and nurserymen's catalogues was kept up for a long time, but was finally abandoned. These and other efforts were of no avail. The public had acquired the use of the first name, and would have no other.

We are at a younger period in our industry and by all interests working together can succeed in obtaining the use of a better name than alligator pear, but otherwise we shall fail as was the case with grapefruit.

If, as is urged, we are to be guided by the Mexican usage, we have authority for avocado, for it is in use there sometimes, though by no means as generally as the other name, and there is still a third word in use for the wild tree.

But practical reasons are the important ones and now, while it is still possible to win its adoption, let us all unite in the use of the name avocado, a musical and spellable word, and let it advocate for us with the American public the use of a delicious and nutritious article of diet.

STOPPING THE CAR

By George Frank Lord

The other day a friend of ours bought a new car. The demonstrator spent several hours showing him how to run it but somehow failed to give him adequate instructions about stopping. He cautiously, but with much elation, drove the car to his home in the country and turned into the circular drive near his house. Just then it dawned upon him that he did not know what to do to stop. So he went 'round and 'round the drive sweating with desperation until he finally decided to throttle down and apply the brakes until he stalled the engine, and that was the way he stopped. Then he telephoned for more explicit instructions against the time when a circular track would not be at hand.

The modern electric starter makes it easy to start a car and it is equally easy to keep it going. But the first and most important thing to learn is how to stop quickly to avoid collision or somersaults into a ditch. Throttling down the gasoline is not sufficient. Any good car will continue to run on level roads with the throttle down to the last notch, as enough gas gets through the carburetor to maintain a speed of four or five miles per hour. Cutting off the spark obviously stops the explosion instantly. It does more, too, because it leaves unexploded gas in the cylinder, the compression of which exerts a back pressure and brakes the car.

When running at slow speed, the best way to stop is to throttle down the gas, cut off the spark and gradually apply the foot brake. Never use the emergency except in emergencies, or to hold the car after stopping on a steep grade. For an emergency stop at high speed, simultaneously, instantly throw out clutch and apply both brakes hard. When going down long grades it is advisable to use either high or intermediate gear, or if very steep, low gear, cut off spark, reduce throttle to save gas, and apply foot and hand brake alternately for short periods of time to avoid burning.

In applying brakes, remember that the greatest and safest brake power is obtained just short of skidding. Notice a locomotive engineer stopping his train. He applies the air brake until the wheels begin to buck and jump. Then he releases the brake and immediately applies it again. He repeats the process four or five times until he finally eases the heavy train to a stop.

It is the same way with an automobile. Abrupt, heavy braking causes skidding and grinds the treads off of tires. It is both dangerous and expensive.

Another good plan for getting a speeding car under control is to release clutch and apply foot brake to reduce to about 15 miles per hour, shift gear lever to second gear, speed up motor and ease in clutch.

This is a good method when you suddenly meet with bad going and want to feel your way. Second gear is best for city streets crowded with traffic, as you can throttle down to a crawl or spurt a hundred feet when you get the chance.—Vertical Farming.

DIRTY IGNITOR POINTS

If your engine has been in use very shortly previous to the time you experience trouble in starting, trouble may be due to dirty or short circuited points. With a contact ignitor test completely without removing the ignitor from engine as follows: First see that all connections in battery and wiring are firm, then loosen the wire from the insulated stationary electrode and, with switch closed, snap wire across other terminal. If a good spark is produced you are sure battery is giving current.

Next turn engine till ignitor trips and try wire on insulated electrode. If a spark is produced here, the points are short circuited inside, probably by water or carbon. If no spark, the points are not short circuited. Now turn engine again, but stop just before ignition trips. Points are then in contact inside. Try wire again on the insulated electrode. If no spark is produced points are dirty. If a spark is produced the ignitor is all right.

If points are dirty or short circuited, the ignitor must be removed and cleaned. Tests are best made in order given above, as it would do no good to test for dirty points if battery is worn out or if points are short circuited.

With a jump spark system the test is not so easy, but the plug can easily be removed, examined and tried while outside the cylinder. Be sure the plug is dry, as a very fine film of moisture, even though it be gasoline, covering point and porcelain will short circuit a plug. Battery is tested by short circuiting plug on outside before removing from cylinder. For this purpose use screw driver or other tool with wood on handle to prevent receiving a shock.—E. R. Gross, Colorado Agricultural College.

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It is not a caustic material.

It is easy to mix and apply.

It is a proven material.

It is being used by many of the largest and most progressive growers.

We operate under state license.

We can show you.

And all this for one half the cost of fumigation.

Citrus Zeno sold in 50-gal. bbls. at \$14.00 per bbl., f. o. b., Los Angeles.

For summer and fall spraying dilute at the rate of 1 gal. Citrus Zeno to 30 gals. water.

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Give the roots a chance

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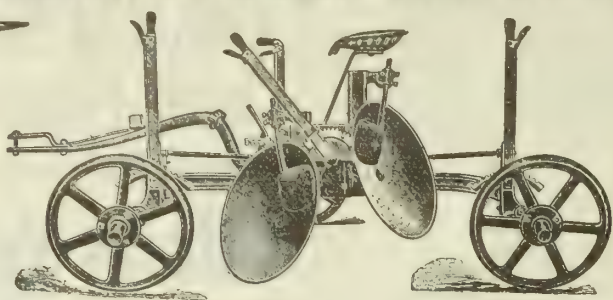
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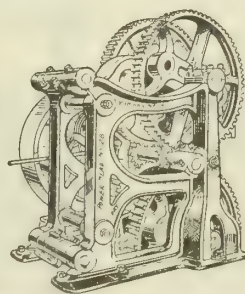
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THE California Wine Association sold its 1915 raisin crop to J. B. Inderrieden & Co., independent packers, and this act has aroused considerable feeling among officials of the California Associated Raisin Company, the growers' organization, according to the Fresno Republican. The Sun-Maid Herald, the Associated publication, this month publishes copies of a letter and a telegram sent by Wylie M. Giffen, president of the Associated, to officers of the wine association regarding the deal. This correspondence took place before the raisins were sold but after the wine

you expect to sell your raisins on the 25th of this month to the highest bidder. This necessarily means that they go to the independent packers, as we buy only on the regular contract and their price will undoubtedly be a half a cent higher than ours. By the sacrifices of 6500 growers this organization was made possible, and it seems unthinkable that a great organization like yours should be willing to take advantage of their efforts without contributing your share. Our very existence depends upon the support of the growers and the value of not alone your crops, but of every acre of land you own in this valley depends in a large measure upon our existence. The prosperity of at least 150,000 people depends upon this organization, and today their eyes are upon you, and you cannot afford, and we cannot

Community Cooperation

TRADEMARKED-ADVERTISED MERCHANDISE

R. V. Holland



IN an obscure village "way down South", we'll call it Hawkin's Corner for convenience sake, there lives a little woman who makes a livelihood from the sale of eggs and chickens. Not the common, ordinary, every-day, haphazard varieties, but standard eggs and chickens of known quality.

The reason why this progressive little woman has been more successful than the average producer of these commonplace commodities is the fact that consumers in the locality have become convinced that they can at all times absolutely rely upon the quality of every egg and every chicken sold by Mrs. Parmelia Hawkins.

How can prospective purchasers identify Mrs. Hawkins' products? By her name on them, of course; just as you can identify certain makes, or brands, of automobiles, implements, collars, hosiery, talking machines, food products, and the thousand-and-one other articles you buy and use.

Every egg that Mrs. Hawkins offers for sale has plainly stamped upon it the date upon which it was laid and her name. To every chicken marketed, whether alive or dressed, is attached a neat tag stating that it has been properly fed, carefully inspected, and is guaranteed by Mrs. Hawkins to be a clean, healthy fowl.

It is hardly necessary to add that Mrs. Hawkins is never forced, or even called on, to make good her guarantee. Her one most valuable asset, her good name, backed by her reputation, is on every article she sells and serves as a quality pledge to all purchasers.

Disregarding her natural pride in her name, Mrs. Hawkins cannot, purely from the standpoint of good business judgment and policy, afford to let her eggs and chickens fall below the standards she has created and maintained. They simply must come up to every claim she makes for them. She has quite an investment of real money in the reputation of, and consumer confidence in, "Mrs. Hawkins' Eggs & Chickens", and she realizes that any reduction of quality will necessarily impair or destroy that investment.

Of course it is more difficult to produce quality goods than the inferior sort. Production requires closer attention and at times a little extra expense, but when one is endeavoring to build a business or industry and make a reputation for his or her particular line of products, these things are necessary to the end in view.

Weigh this question carefully: Wouldn't you rather have Mrs. Hawkins' eggs and chickens than those of doubtful quality and unknown origin? Then too, don't you think that this little woman, as well as every other individual and firm pursuing her methods, should have the encouragement and support of the consuming public? Don't they deserve it? Not from a sentimental or sympathetic standpoint but purely on the ground of getting value received for the amount of money expended.

Products of the Mrs. Hawkins' variety are obtainable in every village, town and city in this country, and they cost no more than the unknown sort. They include everything you have any possible use for from hooks and eyes to traction engines. They are commonly known and referred to as standard or trademarked-advertised products.

association had announced it would receive bids.

In the same publication, announcement is made by James Madison, vice president and general manager of the Associated, that steps will probably be taken next year to organize the wine grape growers in an effort to get more than six cents a gallon for the wine contained in their grapes.

The telegram and letter sent by Giffen follow:

Fresno, Cal., Sept. 18, 1915.

Mr. B. R. Kittridge,
Care California Wine Association,
4010 West 14th Street,
New York City.

Mr. Beveridge just informs us that

afford, to have you lend your support to interests inimical to ours.

Wylie M. Giffen.

Sept. 18, 1915.

California Wine Association,
108 Townsend Street,
San Francisco, Cal.
Attention Mr. Wetmore.

Gentlemen:—Your Mr. Beveridge informs us that you have decided to sell your raisins to the highest bidder and will accept bids on the 25th of this month. This necessarily means that your crop will go to the independent packers, as we have but one price, which is, as you understand, 3¼c for Muscats, 3c for Sultanas and 3½c for Thompsons at the time of delivery,

with all they bring more than that at the final settlement to be made a year hence.

The independent packers will undoubtedly pay you a higher price. If you take the figures that we pay at time of delivery, their price will seem much higher, but on the seedless varieties there is no question but what our final settlement will come within about a half cent of what they will offer. I wish I could say to you that I felt that our final settlement will equal what they will pay you, but I do not want your crop on anything but a fair basis. As you well know, we are carrying the burden for the whole community, and the independent packers and the growers that support them are getting the advantage of our efforts without contributing a single cent.

You are familiar enough with the fruit industries of this state to know positively that raisins today would not be worth two cents a pound if it were not for this organization. This is made possible by the sacrifices of 6500 growers, who have put up the capital and are selling their crops on the same terms that we offer you. There is not one of these 6500 growers but what could sell for the same high price that you can sell for if they were free to do so and the organization still existed. In other words it is not because you are more capable than the rest of us, but because you are taking advantage of our efforts that you can get the high price that you get.

It seems to me almost unthinkable that a great organization like yours, for the difference of a few thousand dollars, would take advantage of the efforts of thousands of growers that, as compared with you, are but poor men, and I am writing you this letter with the hope that it is not too late and that you still will think better of the matter and deliver your crop to us on the same terms as other growers.

I wish to say, not as a threat, but as a simple statement of facts, that as surely as you let the temptation to get a few dollars extra stand in the way of what you must yourselves know to be the right thing, there will be a day of reckoning that will cost you far more than the temporary gain will be. The raisin growing district has contributed generously to your welfare in the last ten or 15 years, and there is not one per cent of the entire number of raisin growers, or for that matter the entire number of people living in the San Joaquin valley, but what believe in the California Associated Raisin Company, and regardless of your feeling toward either Mr. Madison or the writer, regardless of any differences that we may have had in the past, you owe something to the community that has done so much for you, and this is a debt of honor which is greater than a money debt, and we can better afford to lose your crop than you can afford to repudiate that debt.

Yours sincerely,
Wylie M. Giffen.

THE VALUE OF BIRDS TO MAN

The true lords of the universe are the insects, according to a zoological article in the Smithsonian annual report on the value of birds to men, in which the author, James Buckland, of London, makes the statement that, although man imagines himself the dominant power of the earth, he is nothing of the sort. Although man has attained predominance over the fiercest and most powerful reptiles, he and his works would be of little avail

GARDEN BEAUTIFUL

The Garden Beautiful in California is the title of the California Cultivator's latest "\$ Series", and before another issue of this paper it will be on sale at the book stores. It's "a great book for the price—worth twice" as one admirer has expressed it. It is written by Ernest Branton, for 15 years a writer in the Ornamental Garden Department of the Cultivator.

The book is beautifully illustrated with text figures and 14 full page plates. Fine large type makes easy reading and the binding is so attractive that the book will make a fine Christmas present.

A review and more extended notice in next issue.

before an attack of insects, which include a greater number of species than all other living creatures combined. Some 300,000 species have been described, while possibly twice that number still remain unknown.

The author says that these hordes feed on nearly all living animals and practically all plants, and multiply

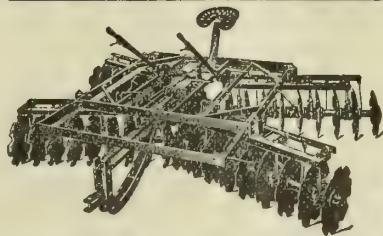
into prodigious numbers in an incredibly short time. Computations show that one species, developing 13 generations a year, would, if unchecked to the twelfth generation, multiply to ten sextillions of individuals, while a single pair of the well-known gypsy moths, if unchecked, would produce in eight years enough progeny to de-

stroy all the foliage of the United States. One pair of potato bugs, he states, would develop unchecked 60,000,000 in a single season, at which rate of multiplication the potato plant would not long survive.

According to Mr. Buckland's article, insects are quite as astounding in their consuming qualities as in their rate of increase; a caterpillar eats twice its weight in leaves a day, and in proportion a horse would consume a ton of hay in 24 hours. Certain flesh-eating larvae consume 200 times their original weight in 24 hours; at this rate an infant would devour 1500 pounds of meat during the first day of its life. It is reported by a specialist that the food taken by a silkworm in 36 days equals 86,000 times its original weight.

Reedley is planning for a fall festival. The date is not yet announced.

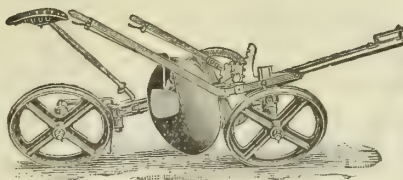
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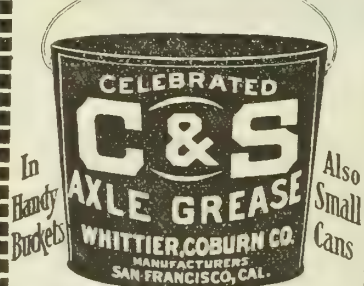
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Small Fruits



Vegetables

LATE FALL PLANTING

Written for California Cultivator
By H. Culbertson

The question is frequently asked what can be planted this time of year. The following will be found satisfactory: Cabbage, cauliflower, peas, turnips, onions, beets and lettuce. To get them started make small furrows and irrigate, planting the seed in the furrow immediately after the water disappears. As soon as the seed is covered make another furrow between the rows and run the water until the under soil is wet. Two days later run water in the same furrows for an hour or so on most soils. When in the right condition, cultivate.

The writer adds to the above the soaking of the seed in water 24 hours. After draining off the water sift some fine dust over the seed, stir well and the seed will be dry enough to handle. The plants will appear in about half the usual time in this way and are very sure to come. Where birds are likely to work on the young plants a little wheat or oats planted the same way a short distance from the vegetables makes them less liable to the bird troubles. The grain should be put in two or three days before the vegetables.

For a fair sized family a garden 40 feet each way is ample for the growing of everything in the ordinary vegetable line. One wagon load of manure each year will keep it in good condition. Add to this 100 pounds of some good commercial fertilizer with at least five or six per cent of nitrogen, and there will be a splendid basis for satisfactory return from the vegetables. Plenty of irrigation and cultivation will do the rest.

THE MANGEL WURZEL

Written for California Cultivator
By H. Culbertson.

Keeping a cow without some green and succulent food during the summer is rather an expensive affair. So much so that many do not do it. The important question is what to grow. This depends on what crops are grown on the farm for feeding. If only grain hay is grown the special feeds to be grown should be different from those grown on the farm where alfalfa is raised. Grain hay, oats or wheat, cut just before the grain is in the milk stage, makes fine cow feed, but is short in the amount of protein necessary for a balanced ration. When alfalfa alone is used there is too much protein. In neither case will the stock eat enough to do their best.

Where alfalfa is used as the main feed the mangel wurzel is good to balance the ration and improve the milk supply. The amount for a cow for a season is about one-tenth of an acre. The soil should be good and well cared for. Planting in February is preferable. The rows should be 18 or 20 inches apart. By closing the cultivator and taking off most of the teeth they can be cultivated with the horse cultivator until the tops get too large. The ground, being well shaded by this time, they do well the most of the season without further cultivation. In the warmest weather they need irri-

gation every two weeks on most soils. When the tops get to be about four or five inches high thin to about one foot apart.

Feed the thinnings to the cow and they will be fully appreciated. The writer thins a small amount each day as the cow can use them. In feeding give tops and all. It is not necessary to cut them when large before feeding. The cow soon learns to bite out what she wants.

When the beets are growing fast and are tender they make a good feed for the poultry. To get them started to eating the roots cut them both ways on one side into squares from an eighth to a quarter of an inch across.

Cows will eat 15 to 25 pounds at a feed twice a day. If alfalfa is used as the main feed bran will not be required. One of the advantages in growing this kind of beet for stock feed is that a large part of the beet is above ground and is easily taken up.

THE ORIGIN OF THE TOMATO

No product ministers more delightfully to the palate of the modern epicure than does the tomato, that luscious, succulent, refreshing vegetable-fruit which gratifies the eye with its beauty of color and form, stills hunger with its meat and assuages thirst with its juice.

The name "tomato" seems to be of Aztec origin, given as *tomatl* by some authorities and as *xitomate* by others, and still persists in some few of the older Mexican town names, such as *Tomatlan*, *Tomatepec*, etc., but the general consensus of opinion among botanists seems to be that the plant and its culture for edible purposes originated in Peru whence it spread to other sections of the Americas. It is certain at any rate that it was known and cultivated for its fruit centuries before the Columbian discovery.

That the cultivated tomato was known to some of the European botanists over 360 years ago is evidenced by the fact that two large varieties were described by Matthioli as early as 1554, but for many years it was only in southern Europe that the value of the fruit for use in soups and as a salad was recognized. It was quite generally used in Spain and Italy during the 17th century, but in England and in northern Europe generally the plant was grown only in botanical gardens as a curiosity and for ornamental purposes. It was seldom eaten, being commonly regarded as unhealthful and even poisonous. This belief probably arose because of the close resemblance of the plant

to its relative the nightshade, or belladonna, and had, of course, no foundation in fact. It was not until the early part of the 19th century that the tomato came into general use as a food in northern Europe and even in the United States. Since about 1835, however, the use and cultivation of the vegetable has grown to such an extent that it has now become one of the most important of our garden crops.

When a successful process of canning the fruit was evolved the tomato industry at once assumed large proportions. It was found that for all cooking purposes the canned fruit was as good as that fresh from the vine, and as a result the tomato has become a staple food the year round, and millions of dollars are now invested in canning factories in the United States, whose chief output consists of tomatoes. From statistics compiled by the National Canners' Association for the year 1914 it is learned that among the tomato-producing states Maryland ranked first with a production of 5,850,000 cases of canned tomatoes; Delaware second, with 1,335,000 cases; Indiana third with 1,295,000 cases. The total production for the whole country amounted to 15,222,000 cases of tomatoes and about 5,000,000 cases of tomato pulp (used in making catsup, sauces, soups, etc.). The total was therefore over 20,000,000 cases of 24 two-pound cans each, or an output of 480,000,000 cans, weighing 480,000 tons and having an approximate value of \$28,000,000. These figures deal only with the canned product of factories keeping accurate statistics. When we remember that perhaps twice as many more are eaten raw and canned by the thrifty housewives and girls' canning clubs, we may get some idea of the importance in our national economy of the garden tomato.

Constant mowing is one of the best means of keeping down the weeds in the yard. Where mowing does not eradicate them, hand work is the best remedy for small lawns, and in the case of large lawns it is best to plow up and after thorough cultivation, reseed.

Too many people sow lettuce in beds and do not thin the plants. It is much better to sow in rows a foot apart and then thin the plants to about eight inches.

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COMING EVENTS

SEE the great live stock show. Full particulars are given in Mr. Guilford's article on this page. It is essentially a Western show and in this respect different from the real "International" which was anticipated. Foot and mouth disease has completely changed its character. It is, however, a great exposition of live stock. As it is, the participants are all from the herds of live stock men of Arizona, New Mexico, Colorado, Nebraska, Washington, Oregon, Oklahoma, Texas, Nevada and California. These states have sent 162 beef cattle and 592 dairy cattle.

Sheep and swine, the exhibits of which begin November 3, will doubtless suffer from a similar quarantine order, but a big show is being planned for.

Government foresters and lumber experts are holding a great conclave this week, which is termed "forest week." There are discussions on methods of conserving our forests and of increasing the supply.

The American Aberdeen Angus Breeders' Association holds its annual convention in connection with the exposition beginning next week.

The Red Polled Cattle Club of America holds its annual convention

Tuesday, October 26; also, on the same day the Polled Durham Breeders' Association.

The California Creamery Operators' Association holds its annual in connection with the exposition, October 28, 29, 30. L. M. Davis of the university farm, Davis, is secretary.

The American Milch Goat Record Association holds its annual in San Francisco, November 3.

The American Poland China Record Association annual, November 3.

Romney Sheep Breeders' Association, November 4.

Continental Dorset Club, November 5.

National Swine Growers' Association, November 5.

American Rambouillet Sheep Breeders' Association, November 5.

American Southdown Breeders' Association, November 6.

American Hampshire Swine Record Association annual, November 6.

* * *

The great cattle parade takes place Monday, October 25.

The National Fall Flower Day also comes on Monday.

Thursday of next week is Creamery Operators' Day and Friday is Dairy-men's Day.

Saturday, October 30, will be the world's light harness races.

The Great P. P. I. E. Cattle Show

An Exhibition of Pacific Coast Cattle That Every California Farmer Should See During the Next Two Weeks. Written for the California Cultivator by W. S. Guilford

ON Monday, October 18, the World's Fair Cattle Show opened and will continue until November 1.

It is a strictly Western show, the quarantine regulations preventing the exhibition of cattle from east of the Mississippi River. Had it not been for this quarantine there would have been one of the largest shows ever held. About 750 head are now on exhibit, of which nearly 600 are dairy cattle.

There are some wonderful cattle on display, many of the best individuals of the various breeds to be seen anywhere, and every California farmer will be well repaid for a visit to this show which is a demonstration of the fact that there is no better breeding

ground in the world than the Pacific Coast.

The judging began Monday, October 18, and will be practically finished this week. Meetings of the various breed organizations are being held.

There is a great show of dairy cattle, although some of the biggest California breeders are not represented.

Jerseys

The Jersey classes are particularly strong. A representative of the American Jersey Cattle Club has an attractive booth where literature is distributed and the interests of the breed in general are looked after. W. H. Locke of Lockeford and Guy H. Miller of Modesto have big shows, and Clifford Reed, of Portland, Oregon; Clark H. Embree, Monmouth, Oregon; Ed Carey, Lafayette, Oregon; J. Lynn, Amity, Oregon, are on hand with winners from the shows in the Northwest.

The judging is being done by Thos. Dempsey, of Westerville, Ohio.

There are many high producing in-

Continued on Page 400

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Make Your Land Yield Its Full Richness

THERE'S no longer any reason for your being satisfied with the foot-deep yield of the plow. You can easily utilize that wealth of virgin plant food four or five feet below the surface.

You can get bigger, better crops; you can get bigger profits, by subsoiling your land.

Subsoiling breaks up the tight or hardpan soil and encourages long vigorous roots that quickly reach down to the fresh mineral plant food.

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In the orchard as well as the field they are profitably using this great agricultural power; all the benefits derived from subsoil blasting for crops, also apply to tree-planting.

Holes made in this manner leave the subsoil shattered and capable of storing more water than would otherwise be possible. The roots are given a more open material through which they can send down their feeders. As a result trees planted in blasted holes develop more rapidly and bear earlier than those in spade-dug holes.

But subsoiling and tree-planting are only two of the many uses for Hercules dynamite on the farm. These and other ways in which it can make your farm more productive are clearly explained in our

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Note: The Hercules Powder Company has been awarded a Gold Medal by the Department of Mines and Metallurgy, Panama-Pacific Exposition, for its exhibit of manufacture and use of explosives, motion pictures and powder magazine.

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General Agriculture



GLENN COUNTY FARM BUREAU ANNUAL MEETING

Written for California Cultivator
By Sacramento Valley Contributor

THE first annual meeting of the Glenn County farm bureau was held in Willows Saturday, October 9.

Those most deeply interested in the farm adviser or farm agent movement have been looking forward to this meeting with a great deal of interest, for it was believed that it would be an indication of the success and popularity of the proposition and that from it the future could be forecasted with some degree of accuracy.

The hopes of the most optimistic were more than realized. It was estimated that never before at one time were more of the substantial, representative citizens of the county in attendance at a meeting in the county seat. The leaders in the agricultural development of Glenn are heartily in favor of the farm adviser and the farm bureau centers and are supporting the movement in every possible way. Farm Adviser W. H. Heileman has made a place for himself in Glenn County. He has already done much effective work and is now in position to follow up the things that have been started and be of greater value from year to year.

There was a big meeting in the court house at 10 o'clock in the morning, a "big feed" provided by the ladies, the "associate members" of the various bureaus, at noon, and a bigger meeting at the new Gem theatre in the afternoon. Over 400 people were 'fed' at the Maple Hall of the big new Masonic Temple at noon, and more than twice that number were in attendance at the meetings.

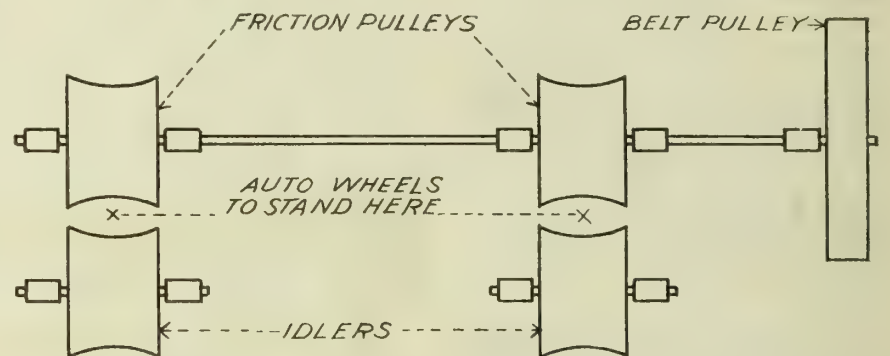
D. C. Cowan of the Bayliss district was re-elected president and S. C. Davis of the Ord district was elected vice president, both by unanimous vote and without other nominations. Four directors-at-large were elected: G. W. Troxel of the Larkin district, W. W. Foster of Codora, S. S. Havenor of Jacinto and A. E. Lindstrom of Ordland. The directors from the farm bureau centers are the various presidents, and are elected in January. These now are Chris Mayhre of Ordland, Wm. C. Saxton of Ord; Henry Giller, Bayliss; N. W. Belleville, Jacinto; O. L. Raper, Larkin; F. L. Burke, Codora.

The afternoon meeting was addressed by Elwood Mead and Harris Weinstock on rural credits and land colonization, and all were urged to not only vote for the rural credits amendment to the constitution, but to see that all their neighbors do. Mr. Mead told of the success of land settlement in Australia where there were the same difficulties and many similar conditions. The turning point in the success or failure of many who buy land in projects comes at the time when the money brought to the country is exhausted and before his development work has progressed sufficiently to make a satisfactory income possible. If some financial aid is available at that time, the money and time already spent will be safeguarded and success

is sure, but if this help is not obtained a proposition that would otherwise be a success may fail. Such help as was given by the state in Australia it is the purpose of the rural credits amendment to make possible here.

While many do not realize it, the percentage of successful intensively cultivated farms on the Sacramento Valley irrigation project and the Ordland project in Glenn County is probably greater than on any other irrigation projects in the United States where the length of time the people have been on the land is considered.

Some have failed on both projects, either from lack of ability or capital or both, and it is natural that more should be heard of these about the community than of the man who stays at home and works his land and cares for his stock and is busy from morn-



ing to night. The only way to find out about the successes on an irrigation project is to go out and hunt them up on the land where they are at work. The failures and "near failures" are always to be found in town talking about their troubles—or on the road.

The same factors tend to make success in the Sacramento Valley as in Australia, and the same type of settler who failed there is a failure here. Those who have sufficient capital, know the farming business, read good farm papers, and will work—succeed—and those lacking these qualifications do not.

Great things for the development of California are to be expected from the leadership and work of Elwood Mead, who is now in charge of the department of Rural Institutions in the University of California.

Some of the things that the Glenn County farm bureau is at work on are: cow testing associations, swine growers' protective association, more and better corn campaign, silos, test of bean varieties, Sudan grass, investigation of marketing grain in bulk instead of sacks, better distribution of telephone and power facilities. The California Cultivator is recognized as a powerful influence in the upbuilding of California agriculture and its interest in the farm adviser movement is greatly appreciated.

AUTO FOR POWER

A subscriber recently requested information as to methods of using the auto to generate power for use on the farm. We asked for suggestions. The following is from H. F. Burbank: "Your question in your last issue of how to draw power from an auto for ranch work suggests the following sketch but I do not know if it would be satisfactory or not.

"This outfit could be set at floor level or a little above and then use an inclined plane to back up onto it. I believe the friction of the tires and pulley would develop a lot of power, the weight of the car giving the friction which would be no harder on the tire than ordinary road work, if as hard. I too, wish to use an auto to run a small feed cutter and so submit this and beg suggestions or any information on the subject of using an auto for farm power.

In addition to the above a Los Angeles subscriber, Mr. A. B. Shaw, submits the following which he has clipped from a daily paper: After driving a 1912 touring car more than 20,000 miles over the rough roads of Saskatchewan, A. W. Bell, a native of Saskatoon, conceived the idea of putting it to work on his farm. His theory was that if the car could stand three years of traveling over the so-called roads of that section of the country, it could go a step better and do the practical work.

The auto was converted into a tractor by the simple arrangement of putting in an extra axle under the frame two feet in front of the rear axle of the car, on which were placed two

binder wheels. After removing the rear wheels of his car Bell replaced them with small sprocket wheels which were connected with large sprockets on the drive wheels by a chain. This reduced the speed of the car and gave it more power.

Bell states he was able to seed 30 acres a day or harrow from 60 to 70 acres with automobile. By drawing the 12-inch bushers, he managed to break five acres of soil a day, or the equivalent of the work done by six or eight horses.

The car consumed just 70 gallons of gasoline to put in the crop, while the cost of horse feed alone would have more than doubled the expenditure. The saving in time and labor was another important item.

It took less than an hour to change the rigging of the car, so that at any time when its owner desired to make the trip to town all that was necessary was to take off the farm equipment and transform the machine into a touring car.

AN AUTO POWER THRESHER

Written for the California Cultivator

Necessity may be the mother of invention, but ingenuity must also be given some credit.

I saw an outfit at work in Yolo county the other day that is surely entitled to a prize for making the best of the conveniences at hand.

A small threshing outfit was being operated by two men. A lot of tangled grain that had been cut by a mower and bunched was being threshed. The crop was on rich land and there was evidently a heavy crop.

And the thresher was being run by automobile power! A pulley had been fastened to one hind wheel, the wheel jacked up, a belt connected to the

pulley on the auto wheel and the drive pulley of the thresher—and there you are.

Everything seemed to be working well and a good job was being done.

BLACK EYE BEANS

We often have requests for information as to where the most of our black eye peas or beans are sold, especially in view of the fact that but few are consumed in California. We note the following which appeared in a recent Florida Times Union:

"The black eye pea, or black-eyed pea, as the dictionary has it, is unknown in the North, but used in great quantities in the South. So large is the demand in Florida that the three distributing points of Jacksonville, Tampa and Pensacola receive about 25,000 bags a year on an average at a valuation of \$4 a bag, the supply coming principally from California.

"It is a favorite food among the negroes in turpentine and logging camps, preferred by them in fact to any other staple article of food; particularly when mixed with rice in a dish known by the singular name of 'hopping John.' It has been found invaluable for conferring energy and enabling the laborers to sustain protracted effort. It is also found on hundreds of tables among the white population.

"Why though should \$100,000 or so be sent to California every year for an article that could be grown in great profusion in Florida? The answer is that the California black-eyed pea will keep as long at least as a year in storage, dry and free from weevils; the Florida product is attacked by weevils soon after it is gathered and in a short time is alive with the insect.

"Evidently, if it could be preserved from the weevil this pea would be a great 'money crop' for this state. It is a tropical vine and the climate of Florida is exactly suited to it. The California article is said to be rather larger than that of this state, but that is mainly a matter of seed selection. There is demand for it in other parts of this section, but no Southern state is able to compete with California in its production—at least, the weevil attacks the crop of every Southern state.

"Some five or seven years ago only a few carloads of these peas were imported from California into Florida. They were then quoted at one dollar a bag less than the price for Lima beans or pea beans. Now Florida alone receives from the Pacific coast about fifty carloads of 500 bags each a year, and they sell for \$1 a bag more than the other leguminous foods mentioned. It was soon discovered in the trade that the Pacific Coast product is weevil-proof and there has been considerable speculation as to how this immunity was secured. Investigation has developed the fact that black-eyed peas are subjected to a temperature of 125 degrees for eight or ten hours, or of 140 to 150 degrees for a shorter time, all the eggs, larvae and adults of the weevil will be destroyed, provided the process is properly carried out. If through a chamber heated to 180 degrees on a belt conveyer a temperature fatal to the weevil in all its stages will be reached throughout the mass in from twenty to thirty minutes, provided the peas are not deeper than three or four inches, or the depth may be greater if they are in trays provided with wire netting bottoms."

RAPID INCREASE IN RICE GROWING

Approximately 34,350 acres were sown to rice in California in 1915 according to government estimates. This is more than double the acreage of last year and is a remarkable increase in the three years since 1912, when the industry began in a modest way with the planting of 1400 acres on adobe soil near Biggs in the Sacramento valley.

At present the greater part of the California rice crop is grown on black adobe soil, which is approximately 50 per cent clay and very close and compact. The Sacramento silt loam, found over large areas in the eastern part of Colusa county, is well adapted to the crop, which has also been successfully grown on the Willows clay and on the Alamo clay-loam adobe. In general it may be said that rice requires a clay soil with an impervious subsoil, lying in level tracts and capable of good drainage. Shallow soils are preferable because less water is needed to submerge them.

In 1913 the average yield from the 6000 acres in rice was 3200 pounds an acre. In estimating the cost of producing rice, however, the government estimators have taken as a basis a yield of 3500 pounds. On this basis the average cost per acre is placed at \$36.25.

To secure good results water must be applied continuously and at a uni-

form depth for many days. The land therefore should be level and underlain by an impervious subsoil. Level land is less expensive to prepare for irrigation and the cost of maintenance is also less because fewer levees are needed.

Good drainage is as essential as abundant irrigation; otherwise the ground cannot be put quickly into condition for harvesting and the result is loss of grain.

It is therefore as necessary to provide for the removal as for the supplying of the water—a fact which is frequently overlooked. The solution of the problem is to be found in community cooperation in the creation of drainage districts and careful attention to the drainage ditches after they have been constructed. Where the drainage is insufficient the ground becomes waterlogged and there is a harmful accumulation of alkali.

Waterbure is the variety of rice grown for the most part in California at present and will probably continue to be so for some time. It is late in maturing and the seed should therefore never be sown after May 1. April 1 is perhaps the safest date to recommend for sowing in California. On black adobe soil 90 pounds of seed to the acre will be sufficient, but if the ground is weedy the quantity should be greatly increased.

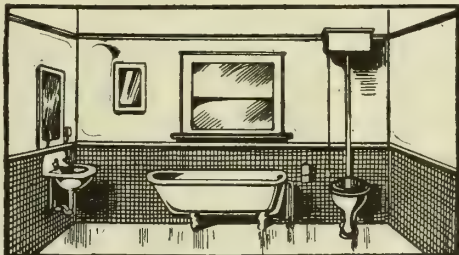
In order to secure germination irrigation is necessary in the majority

of cases, but the water should not be allowed to remain in the fields longer than one or two days after each irrigation. On the other hand, the soil should never be allowed to dry out. After the plants come up experiments indicate that the fields should be submerged to a depth of from five to six inches for approximately thirty days. The amount of water required for this irrigation will depend largely upon the excellence of the construction of the outside levees and upon the care bestowed upon its application. In the experiments already conducted from 4.65 to 8 acre-feet have been used. The location of contour lines, the construction of the levees and the leveling should be done, it is estimated, for about \$9 an acre for permanent wide levees and for \$2.60 for temporary ones.

HIS GRATITUDE

A friend in a near-by suburb has a sign where the water comes through the wall of her house: "Water Your Horses Here." Many a teamster stops, glad for the spirit that invites him to use the privilege. This friend told us the other day that the driver of a coal team stopped and watered his horses. Then he sponged off their hot faces and shoulders. While doing this one of the horses reached out and licked his face. It seemed the only way he could show his appreciation.—F. H. R. in Our Dumb Animals.

"Every Day is Bargain Day" to the Man who Buys BUILDING MATERIAL from WHITING MEAD'S Big CATALOG! 1915 Edition is FREE to you—Saves 20% to 40%

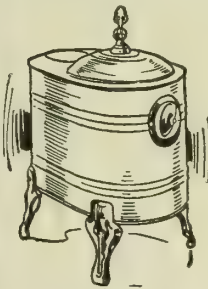


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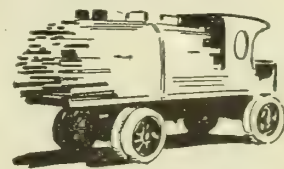
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Established 1888. Twenty-seventh Year.

The California Cultivator

Rural California Combined with the California Cultivator

A Journal of Horticulture and Agriculture

By

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Thursday, Oct. 21, 1915

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We guarantee our subscribers against loss through dishonesty of any advertiser in the Cultivator. We do not attempt, however, to adjust trifling differences between subscribers and honest, responsible advertisers, nor will we pay the debts of honest bankrupts. Notice of complaint must be sent us within 30 days from date of the transaction, and the subscriber must have mentioned the Cultivator when writing the advertiser.

RURAL CREDITS

That there are many men of many minds is being amply shown by the hearings held in various parts of the state by the recently appointed rural credits commission. As has been announced in the Cultivator this commission consists of Col. Harris Weinstock, Dr. Elwood Mead, Dr. David P. Barrows, Mortimer Fleischacker and Senator Wm. E. Brown. Hearings have been held at Sacramento and Stockton, in Los Angeles and several sections of the Imperial Valley, and these hearings will be continued at other points in the state where there is sufficient interest. We venture that the interest will be intense and will keep the commission busy for some time to come. The investigation is following the line of the needs of this state for a better system of credits, especially for the rural classes, and in addition, as really a part of the greater question, information is being gathered as to land settlement or colonization on lands which may be purchased by the state and resold to settlers on exceedingly small payments at a low rate of interest, with a long term of years for completing sale, and as to marketing of farm produce. The commission drew a distinct line between rural credits and land colonization; the one is for the farmer now on his own land, or possibly for the tenant farmer who has the opportunity of farming if he can get proper equipment, while the land colonization plan has to do only with development of lands. The land colonization plan as carried out in Australia, and suggested as practicable for California, contemplated the purchase by the state of lands now idle or at least only partially productive, fitting these for

irrigation or for producing to their highest, with necessary equipment, on the payment or from one to five per cent of its valuation with quarterly or annual payments for a period of years. Rural credits contemplates the loaning to present owners of farm lands not to exceed 50 per cent of the value of the land and appurtenances for a period of 30 or more years on the amortization plan, the interest to be four or five or six per cent as may be necessary, the money to be advanced by the state from funds secured through sale of bonds for this purpose.

If it is deemed unwise to recommend state support then the question the commission is investigating is whether it is possible to secure the cooperation of farmers or of farmers and capitalists which will bring together a private fund sufficient to finance the farming interests. As a rule the feeling seemed to prevail at the hearings that this latter plan which is being worked most successfully in Germany would not be satisfactory in this country.

PATERNALISM

It is to be noted that the bankers of Southern California as a rule feel that disaster may follow a system of rural credits backed by the state to a greater extent than do the bankers of the northern end of the state. Several testifying before the commission in Los Angeles were emphatic in the belief that it would be disastrous or at least that such a plan smacked of paternalism or even of charity to one class of producers.

One witness before the commission expressed himself on this particular point, saying that he could not see why those who feared paternalism so much when it aided the producer to secure capital did not fear any ill effects from the paternalism of protective tariff. He could see no difference in the protection of an infant industry, which is believed in by the great majority of the people of the United States, and the protection and encouragement of the oldest industry which has been unjustly discriminated against.

The commissioners read extracts from hearings at Sacramento and Stockton at which some of the larger bankers expressed the belief that a wise system of rural credits would greatly increase the business of the banks. It would encourage better equipment and bring greater profit to the farmer, which would mean bigger deposits and greater prosperity to the banks of every section of the state. Hence they are working for the enactment of an amendment to the constitution which will permit the state legislature to pass a law which will increase the farmer's opportunities. Mr. Fleischacker of the commission is a banker interested in the larger commercial institutions of San Francisco and he is giving of his time to bring about rural credits.

One point made in this connection is that the banks are not as a rule seeking business in the field that rural credits would enter. Again the Southern California bankers saw possible danger in that politicians might secure jobs which should be filled only by financiers, and that a short time before an election officials who decided on the values of land would be tempted to loan far beyond real values in order to curry favor with those who are influential with the electorate.

In responding to this criticism Commissioner Weinstock called attention to the result of the plan in other countries and to the work in this country of the industrial accident insurance which has not only saved 25 per cent to the insurers, but in addition has accumulated a surplus which will give stability to state insurance. It was felt that this was one proof that state efficiency was fully as great as private. As one of the factors in state insurance the point was mentioned that every investment which is made

from its reserve fund must have the OK of a number of experts.

While no promise is made as to what safeguards will be thrown around rural credits it is to be presumed that the same careful consideration will be given to these points as has been given to the administration of the state insurance, and that no one man can play favorites, for to no one man is left entire discretion in handling the funds. Any one of the many may possibly be dishonest, but it is hardly to be presumed that all of them will be. Also any indication of favoritism to individuals may quickly be controlled through the referendum. In this connection it was announced that England had secured funds through sale of bonds to advance to Ireland in excess of \$3,000,000,000 through a period of many years and as yet not one penny had been lost. The system has been in effect in Australia for 20 years and not only has there been no loss to the state savings banks, which handle this matter, but they have accumulated a surplus.

If the buyer makes his payments for the first few years he is improving his security.

FARMERS NOT SUCCEEDING

In the northern hearings it was stated that in the last few years 90 per cent of the farmers have been unable to meet interest and principal and see nothing but ruin staring them in the face.

While on the richest land in California, probably the richest in the world, the so-called delta lands of the San Joaquin and Sacramento, 75 per cent of the lands are farmed by tenants and of the tenant farmers 75 per cent are Orientals, is there not a demand in the best interests of our state that these rich lands be placed in the hands of home makers and home owners who will mean far more to the prosperity of the state than the Oriental tenants?

True, it may be said that these lands are low and as at present handled not attractive to the best element of white farming, but these conditions may quickly be remedied once the state takes hold. The richest lands in all Europe are farmed by intelligent and well-to-do white people, and the conditions there as to altitude and healthfulness are no better, if as good, as those which can be secured in the delta lands of this state.

PRIVATE CAPITAL

Reference was made to large aggregations of private capital under the direction of mortgage guaranty companies, which operate by selling mortgages direct or using them as collateral. Such a concern has been organized in the city of Los Angeles with a capital of two and a half million, which proposes to loan money on ten and 20 years' time, the interest to be at the usual commercial rates. Many feel that concerns of this kind, together with savings banks, by making certain modifications in their regulations may meet the needs of the farmers and that it is unnecessary to use the credit of the state.

Replying to the question as to whether private capital had ever shown any desire to go to rural districts, bankers usually testified that in the past they had not; there were usually sufficient opportunities to loan money nearer home. The majority of the city money is used in the city; when there is a surplus, then the city banks begin to reach out to the country and the more remote districts.

MARKETING

It is true that greater production, which it is reasonably sure will be secured by rural credits, is not the crying need of California farmers so much as that a living price be secured for what is produced. This point was especially dwelt upon by those who are not friendly to the rural credits movement. Frequent reference was made to this year's conditions when the peaches already produced have not sold for enough to cover the cost of picking. Olives, apricots, alfalfa, nearly all products were referred to

as giving strength to this argument, and all agree that there is pressing need for action in the matter of marketing. And the commission seems to give as much attention to questions touching upon marketing as to rural credits. All told, it is a many sided question, and men with large minds are on this commission, and we believe it will evolve a scheme which will tend to make far more successful the farming operations of this state. But it and the legislature together will be powerless to act unless Amendment 17, Number 5 on the ballot is voted on favorably at the election which is to be held October 26.

Agricultural Notes

The Louisiana citrus crop this season is estimated at about 300,000 boxes. Mandarins form the bulk of the output.

The 1915 wheat crop of France this year is announced by the minister of agriculture as more than 1,000,000 tons less than in 1914.

An American chamber of commerce for Brazil has been organized at Rio de Janeiro to further the development of commerce between the United States and Brazil.

"The Culture of Rice in California" is the title of Farmers Bulletin No. 688 just issued by the bureau of plant industry of the United States department of agriculture. The text is mainly based on experimental work conducted at the rice field station at Biggs, Butte County.

On October 5-8 the sixth annual citrus seminar of Florida was held at Gainesville, Florida. The first day's program was devoted to fertilizers and grove management, the second to citrus canker, the third to other citrus diseases and pests. The last day was given exclusively to marketing.

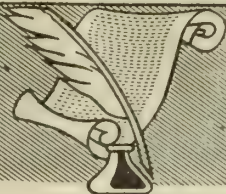
The reason for the stronger tendencies and record buying of low-grade apples in the Pacific Northwest recently was made known in the fact that practically all the recent purchases were for shipment to Europe, states a Portland, Oregon, press report. Conservative estimates of the orders place the total at almost 500 carloads.

The fruit branch of the Dominion department of agriculture has now begun an educational advertising campaign to promote the consumption of peaches and other fruits in Canada. In this advertising matter the superior quality of Canadian fruits and the hygienic benefits of eating good fruit freely are emphasized. It is urged that fruit which can not be consumed at once should be canned or preserved. The advertisement says, "More fruit and less meat should be the rule this winter. It would mean better health and greater economy. * * * Eat plenty of Canadian fruit—lock the medicine chest and lose the key."

Rapidly augmenting prices of meat in Italy have caused a number of stock farmers' conferences to be held under the initiative of the national agrarian committee. To supply 2,000,000 troops it is estimated that in six months of war an additional 250,000 head of cattle would be necessary, or, in other words, Italy must provide for an increase in the number of cattle slaughtered of more than 40,000 head a month. Obviously, after subtracting the numbers needed for milch and draft animals, the cattle supply of Italy can not respond to these increased demands on it without outside help. There must be an importation of live cattle or an importation of preserved, canned, refrigerated, or frozen meat. Canada and Brazil are looked to as the chief sources for supplying the present need.

Next Tuesday Vote No. 5 "Yes" on the Ballot---"Rural Credits, Senate Constitutional Amendment 17"

Agricultural News Notes



of the Pacific Coast

Northern California

Esparto, Yolo County, observed October 9 as rice day.

Wine grape growers are generally selling at \$12 per ton.

Olive pickling plants at Oroville are busily preparing for the season's run.

The Santa Rosa Republican reports hop sales slow. Most of the sales made are at 12 cents.

The orange crop of Oroville, Butte County, is now estimated at about 75 per cent of last year's.

The boys' agricultural clubs of the state met at the university farm at Davis October 14 to 16.

There will be a poultry show in connection with the Marysville Rice Carnival to be held October 25-31.

The Butte County Orange League is still protesting against the standard of maturity fixed by the federal government.

The railroad commission has decided that the present freight rate on paddy rice must stand, that rice does not come under the grain rate.

Marysville, Yuba County, will hold its rice carnival the week of October 25 to 31. A comprehensive publicity campaign has been launched.

Northern California counties released from the sheep scabies quarantine are Butte, Yuba, Sacramento, Yolo, Solano, Contra Costa, Alameda and San Francisco.

Subscriptions are being solicited in the Eel River Valley to secure funds for gathering data on the Eel River irrigation project in order that the matter may be properly presented to congress.

Farmers who are members of the Humboldt County farm bureau are now securing lime at \$5.75 delivered. This matter is handled by the Humboldt County farm bureau business agent.

Thousands of acres of timber land in the Moraga Valley in Alameda and Contra Costa Counties was destroyed by fire the first of the month. The blaze was supposed to have started from a camp fire.

The California Creamery Operator's Association will convene at the Panama-Pacific exposition for three days, beginning October 29. One of the features of the convention will be the butter-scoring contest.

Orange men of Butte County, who are protesting against the maturity test for oranges imposed by the federal government, are discussing the advisability of sending a representative to Washington to state their case.

At the last monthly meeting of the Humboldt County Dairymen's Association at Ferndale it was decided to invite the California Creamery Operators' Association to hold its annual convention in the fall of 1916 at Ferndale.

Figures now available show that the total hop production in the Sacramento Valley Counties is approximately 67,231 bales. This is about eight per cent short of the total yield in 1914. Sacramento County is the heaviest producer, her yield being practically half the output of the valley.

Central California

The peach growers' organization is still campaigning for new members.

A new packing house has just been completed at Lindsay, Tulare County.

Lemon Cove, Tulare County, has shipped out about 600 carloads of oranges.

Reports from Fresno indicate that between 800 and 900 cars of grapes remain yet to be shipped.

There is talk of forming a cow testing association in Stanislaus County under direction of the farm bureau.

A larger campaign than ever is being planned by the organizers of the California Peach Growers' Company.

Peach growers of Oleander, Fresno County, have already subscribed \$1280 toward the Peach Growers' Association.

The West Coast Potato Association met at Stockton Saturday, October 2. The attendance was disappointingly small.

The annual meeting of the Kern County farm bureau will be held on November 27 at the county high school.

Raisins are in good shape in the vineyards around Hanford. The packing houses are rushed with the incoming fruit.

The delivery of raisins to the California Associated Raisin Company is very heavy. It is now averaging 1000 tons per day.

The Watsonville Apple Distributors have taken up the question of the advisability of securing a farm adviser for Monterey County.

The Tulare County Growers' Protective Association has unanimously decided to maintain the government standard for maturity of oranges.

J. L. Taylor of Three Rivers, Tulare County, is in San Francisco attending the exposition. Mr. Taylor has been a subscriber of the Cultivator for 15 years.

The state railroad commission has requested shippers to load and unload freight cars with the utmost expedition in order that car shortage may be avoided.

Modesto alfalfa fields are still being "barbered." Modesto's slogan, "Water, Wealth, Contentment, Health," might be made to read "Soil, Water, Alfalfa, Cows, Fat Bank Accounts."

The country "seen from the car windows" between Hanford and Sacramento looks prosperous. The fine dry fall weather is appreciated by all workers of the soil and the crops are well in hand.

Lindsay orange growers are planning to exhibit at the National Orange Show at San Bernardino February 17-24, 1916. Lindsay this year carried off the sweepstakes at this show and the growers have no notion of taking second place next year.

A campaign against the red spider, which is working destruction to the prune crop of the Santa Clara Valley, has begun. It is under the supervision of H. H. Taylor of the state university. A liquid lime sulphur spray is to be used during the winter, followed by a sulphur spray in the summer.

Southern California

There will be a flower show in Los Angeles October 23-30.

Orange County's fair showed a splendid variety of exhibits.

Banning is to hold a flower show at a date soon to be announced.

More than 3000 sacks of sugar are being made daily at the Chino factory.

The famous 101 Ranch, south of Brawley, is to be subdivided into 40-acre plots.

The citrus fruit juice factory in Cucamonga is making a trial run on black grapes.

Orange County is holding its county fair at Santa Ana this week, from the 12th to the 16th.

An increase of nearly 1500 acres in new plantings of apricots is reported from the Hemet Valley.

California's ripening citrus crop is estimated at approximately 48,000 cars by the Santa Fe railroad.

Estimates by bean men of Orange County place their income from this year's crop at about a million and a half.

The first Antelope Valley Fair was held at Lancaster Friday and Saturday, October 8-9. There were many agricultural exhibits.

That fully 100,000 acres will be planted in cotton in the Imperial Valley next year is predicted by several valley growers.

Yuicapa's apple show will be held November 4, 5, 6. Growers of the Oakglens and Beaumont districts will exhibit their fruit.

The walnut crop for California this season is estimated at 12,500. The price on No. Ones has been fixed at 13.6 cents per pound.

The Ventura County Cured Fruit Association will soon distribute to its members \$26,000 as first payment on apricots delivered to the warehouse.

The counties' convention of the California Development Board will convene at San Diego November 12 and 13 to discuss better market methods.

The Hemet-San Jacinto Growers' Association is making arrangements to pack its own olives, although machinery cannot be installed to handle this year's pack.

The horticultural commissioner of Santa Barbara County reports lima bean yields in several sections at least 50 per cent higher than on the same fields last year.

A marketing expert of the United States department of commerce is stationed in El Centro to work with the Long Staple Cotton Growers' Association in marketing the Durango crop.

The Fairview Farms' Products' fair held on October 2 brought out a very satisfactory exhibit of farm products. The exhibits will be displayed at the Orange County fair being held in Santa Ana this week.

The Arlington Heights Citrus Exchange has passed a resolution deprecating the patenting of the Chase orange separator by a manufacturer. Mr. Chase perfected the separator and offered it freely for the use of all citrus growers.

The Coast

Owners of Angora goats in Arizona are just finishing their fall clip.

Bellingham, Washington, reports an apple crop only 50 per cent of normal.

Wheat buying for Eastern shipment is reported heavy again at Portland, Oregon.

Wenatchee, Washington, holds the palm for shipments of apples this season from the state.

Apple packing will be in full swing in the Spokane Valley of Washington until Christmas time.

Portland, Oregon, reports buying of wheat very slow but the farmers getting the prices they ask.

The Oregon agricultural college has installed an instructor in the use and care of farm machinery.

The Idaho state fair at Caldwell the last week of September had more live stock entries than any previous state fair.

To meet the increasing demand for an alfalfa meal mill four new mills have been built in Colorado and another four in Montana.

Twelve thousand sacks of wheat were disposed of in one sale at Pullman, Washington, recently. The price paid was about 70 cents.

The management of the Arizona state fair is now distributing official premium lists. The fair will be held at Phoenix, November 15-20.

The Seattle market last year received about 100,000 boxes of Japanese oranges. This year there seems to be little demand for the fruit.

The Oregon hop crop, it is estimated, will this year bring to growers more than \$2,000,000. The price has averaged only about ten cents per pound.

The Walla Walla Valley Cow Testing Association has been organized at Walla Walla, Washington. The state penitentiary has entered its cows for testing.

The Santa Fe Railway Company has contributed funds to the agricultural extension service of Arizona to help defray expenses of a farm adviser in Navajo and Apache Counties.

Apple grading rules of the Yakima Valley of Washington this year exclude worm-stung apples; the only disposition that can be made of this fruit is to the by-products plant.

The Arizona Wool Growers' Association, through its secretary, L. F. Verkamp, is making a vigorous fight against the order of the state tax commission raising the valuation of sheep from \$3.50 to \$4 per head.

Three hundred and fifty head of cattle were entered this year at the Utah state fair. This was the largest number of cattle ever exhibited at the state fair. The value of the live stock was estimated at from a half to three quarters of a million dollars.

The University of Arizona agricultural extension service announces that a special school of instruction for dairy farmers will be held in connection with the fourth annual farmers' short course at the college of agriculture January 3 to 15, inclusive.



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Live Stock and Dairy



BIG CORN CROP IN THE SACRAMENTO VALLEY

Written for The California Cultivator
By Sacramento Valley Contributor.



THE biggest corn crop ever grown in the Sacramento valley is being harvested. The continual subdivision of large acreages, the constant increase in the number of intensively cultivated farms, the greater use of irrigation water, and a realization that more live stock and more stock feed are required for the best agricultural development of the section; are some of the reasons for the planting of more corn.

Many kinds and varieties have been planted, including a number of the sorghums. Among these are brown and white Egyptian corn, milo, feterita, Egyptian wheat, white and yellow dent Indian corn, pop corn and sweet corn.

Corn has been planted on all kinds of soil, from the sandy loams in the river bottoms to the heavy clay and adobe types on the plains and in the foothills, and it has been planted both with and without irrigation.

The yields will vary from 50 to 60 sacks per acre down to nothing. Moisture, rather than fertility, is the limiting factor, although the cultivation required to conserve moisture undoubtedly renders fertility more readily available. Practically all Sacramento valley soils are rich enough to produce big crops of corn if they are properly worked at the right time to make a good seed bed and a sufficient supply of moisture is available.

There are many low yields where the soil was plowed shallow and the crop not cultivated after planting. In many cases, the land was plowed once, harrowed once or twice, the corn planted—and "that's all." The winds evaporated most of the moisture from the soil either before or shortly after the crop was planted, leaving sufficient for only a very small growth of stalk with few, if any, heads.

Along the Sacramento river there are fields that are plowed early in the spring, then replowed and disked and harrowed many times, sometimes eight or ten, during April and May, and the corn planted late in May or early in June. The moisture is held by the mulch created by this cultivating, and all of the weed seeds in the soil are germinated and the weed plants killed before the corn crop is planted. These fields make heavy yields every year, and the varieties grown are generally brown or white Egyptian corn or milo.

Where irrigation is available large crops of Egyptian corn and similar crops are grown as a second crop. Barley or wheat sown in the fall is harvested for hay in May, the land thoroughly irrigated, a seed bed made and corn planted late in May or in June. It is sometimes planted in July and a good crop matured.

The best Indian corn is generally that planted quite early, in April or early in May at the latest. One of the most successful growers of Indian corn in the valley is W. G. Stimmel, superintendent of the Vina Ranch of Stanford University, and he insists

that very early planting is one of the essentials in successful Indian corn growing.

There is opportunity for a far greater increase in the corn acreage of California and with it an increase in the number of animals fed and fattened.

NEW AGRICULTURAL DIRECTOR

Mr. E. B. Balis has succeeded to the position of manager of the agricultural department of the Whittier state school, made vacant by the resignation in August of Mr. W. H. Taylor, who assumed general conduct of the large stock farm of Mrs. Anita Baldwin.

Mr. Balis brings some experience to this work which gives him rather peculiar fitness for the work assigned to him. His boyhood was spent on his father's ranches, which numbered thousands of acres. After a course at the University of California college of agriculture, he acted for the university for a year and a half in testing cows for the advanced registry of the Holstein Friesian Association of America. In the course of this work Mr. Balis has come into direct contact with the breeders and owners of nearly all the purebred Holstein Friesian cattle in this state; and not only the owners and breeders, but the individual animals themselves, have come under his close scrutiny. Thus he is in a position to know accurately the value of different strains now present in the state and can readily decide what individuals in the school herd to retain as promising and what to discard.

It is the intention of the trustees and Superintendent Nelles to bring the herd still more into prominence as one of the strongest herds in the state. This will be done by reserving only cows which have been successful in passing the A. R. O. tests. These tests have been conducted by Mr. Balis during nearly a year, and at this time there is not a single animal in the herd which is not purebred and registered. This, however, is not enough; and within perhaps another 12 months we may see a herd without one member who has not made her A. R. O. standing.

Mr. Balis will by no means confine his attention to the herd, which with the purebred Berkshire hogs will be under the care of two experienced stock men, assisted by a crew of boys. The other features of the farm will receive equal care. Just now walnut picking is about to commence; the Johnson grass is being attacked with persistent vigor; new pipe lines are being laid; and the entire farm, including the floral department and the vegetable garden, is looking up.

The presence of a university man who is also a practical farmer of years of experience in California, is expected to place the school farm still higher as a money maker than it has shown itself to be during the past few years.

NO REDUCTION IN FEE

Secretary Gow of the American Jersey Cattle Club writes that "on the 9th of July last a proposition to reduce the membership fee to \$50 was submitted for a vote by mail of the club members, as provided for in the con-

stitution for its amendment. The result is as follows: Votes against the reduction of fee, 219; votes in favor of reduction of fee, 145; number of members not voting, 190. A change in the constitution requires the written consent of three-fourths of the members of the club voting. As only 145 of the 364 who voted favor the amendment, it has not been adopted, and the club membership fee remains at \$100."

HOGS AND LICE

Written for the California Cultivator
By W. S. Guilford

If every raiser of hogs would make a little investigation of his business and try to determine what per cent of the feed his hogs consume was used to make hog and what part went to the lice and ticks living on the blood of his animals, there would be a tremendous increase in the sale of Kreso and other dips and of crude oil for use around hog lots.

It is doubtful if any one would arrive at anything very definite in the way of percentages, but hundreds of growers would see enough to make them wonder why they had not made the "lice and ticks cleanup" before.

In this country the lice and tick problem is a continuous one. Infestation is apparently everywhere and constant warfare must be waged. This does not mean that the job is a hopeless one or even a very expensive proposition. It is rather a matter of careful attention and keeping everlastingly at it. If there is a dipping vat the hogs should be run through it frequently. If the hogs are to be put in a close pen and sprayed this must be attended to with regularity, and oil and disinfectant must be used in pens and sleeping quarters and on rubbing posts constantly.

DANISH EXPERIENCE WITH FOOT AND MOUTH DISEASE

The Danish outbreak started at about the same time the disease was discovered in this country; it was handled by the isolation, or quarantine, method; the disease has apparently been more virulent in that country and the present status of the disease is not as encouraging in Denmark as it is in the United States.

From the statements made it would appear that Dr. Melvin and the Bureau of Animal Industry are upheld in their contention as to the losses which may be anticipated as a result of this plague and that our present experience in this country is not sufficient to form the basis of a final judgment. Perhaps the United States may have to come to the isolation policy and accept the disease as indigenous to the country, yet Denmark's experience warns us that the wisest policy for us to follow, at the present time, is to slaughter and bury the contagion. Their experience shows how difficult it is to control the disease by quarantine. It should be noted also that after nine or ten months trying to stop the spread of the disease there are still 63 fresh outbreaks weekly. While we have not been able to stamp out the disease entirely, yet we have it under control and no one fears a general outbreak again.

Further, the farmers in Denmark, or where the isolation system is followed bear the entire expense of the disease, but in this country, where the slaughtering system is followed, every taxpayer helps share the loss.

It is the desire of all that the foot and mouth disease be stamped out in this country, but there are varying opinions as to the best method of ac-

completing this. Those who have felt that the government has been wrong in slaughtering cattle and hogs affected with foot and mouth disease should read carefully Dr. Bang's statements and reflect upon what the disease is costing the farmers in Denmark and also upon the final results. —Hoard's Dairyman.

CARE OF THE WORK HORSE

Horses at work on the farm should be given the best of care, and the work should not be too severe or continued for too long time without giving the horse a rest and change of diet. Collars should be examined frequently to see that they conform to changes in the size of the neck as fat changes to muscles, and the hames should be kept perfectly adjusted to the collar. The mane should be kept from under the collar and the shoulders should be washed at meal times, preferably with a little salt in the water. Oats is the standard grain where available, and mixed clover and timothy is one of the best hays. A little hay may be given at noon, all the animals will eat up cleanly over night, and none in the morning. Water should be given three times a day before feeding, and it should be clean enough for the owner to drink.—O. A. C. Bulletin.

SILO SEALING SUGGESTIONS

There is always some loss on the top of the silage unless feeding is begun as soon as the silo is filled. Where the silage is to stand for some time before feeding, it is customary to run in three or four loads of cornstalks from which the ears have been removed. This material is packed thoroughly; then a liberal supply of water is added which will help to seal the silo and only a very small amount of waste will result. Some farmers use oat straw as a covering; others soak the top of the silage with water and sow oats which, when they germinate, form a dense mass which shuts out the air and keeps the silage from spoiling.—J. G. Watson, Missouri College of Agriculture.

COST OF SILO FILLING

No definite cost can be given for silo filling, as it depends on many variable factors, such as the distance from field to silo; weather conditions, it being more expensive during wet weather than clear weather; the efficiency of the machinery and of the men. The cost has been estimated as low as 40 cents, and as high as \$1 per ton. Seventy-five cents would probably be a fair average.—Agricultural Experiment Station, Columbia, Mo.

CATTLE PAPER

One of the hardest problems livestock growers and feeders have had to solve is that of obtaining money at a reasonable rate for a reasonable length of time. To the uninitiated this may look like a simple problem in arithmetic, but many a stockman knows from bitter experience that a high rate of interest piles up a big item on the cost side of the ledger. He knows that many a profit has gone glimmering because a banker would not allow an extension of time sufficient to put the proper finish on the cattle or hogs.

What is needed is a thorough understanding between bankers and farmers. The farmers' feed yards should be as familiar to the country banker as the bank is to the farmer. Better understanding will result in more just treatment of the individual.—Country Gentleman.

HOG CHOLERA

Farmers themselves can do much toward preventing the spread of hog cholera, thus placing swine raising and feeding on a firmer and more profitable basis. To this end the following suggestions are offered:

To Keep Hog Cholera From Reaching Your Herd

Locate your hog lots and pastures away from streams and public highways, and do not allow the hogs to run free on range or permit access to canals or irrigation ditches.

Do not visit your neighbor or allow him to visit you, if either of you have hog cholera on your premises.

Do not drive into hog lots when returning from market or after driving on public highways.

Do not use hog lots for yarding wagons and farm implements.

Do not place newly purchased stock, stock secured or loaned for breeding purposes, or stock exhibited at county fairs, with your herd. Keep such stock quarantined by keeping them in separate pens for at least two weeks, and use care to prevent carrying infection from these to other pens in feeding and attending stock.

Burn to ashes or cover with quicklime and bury under four feet of earth all dead animals and the viscera removed from animals at butchering time because they attract the attention of buzzards, dogs, etc., which are liable to carry hog cholera infection.

Confine your dogs and do not keep pigeons unless you confine them.

It is preferable to secure the water supply from wells.

If Hog Cholera Appears in Your Herd

Treat your hogs immediately with anti-hog-cholera serum, after which they should be kept on a light diet and pure drinking water, and confined to limited quarters that may be cleaned daily and sprayed three times a week with one part of compound cresol solution to thirty parts of water, until the disease is abated in the herd.

To Rid Premises of Infection

Remove all manure and saturate with quicklime.

Burn all litter, rubbish and old hog troughs.

After the premises are thoroughly cleaned, spray walls, floors and other surfaces with disinfectant, one part compound cresol solution to 30 parts water. Where hog houses are small turn them over, exposing interior to sunlight.

Wallow holes and cesspools should be filled in, drained, or fenced off.

All runs underneath buildings should be cleaned and disinfected and then boarded up to keep hogs out.

Destroy hogs that do not fully recover, as they may be carriers of cholera infection.

For information regarding hog cholera see your farm adviser or address Dr. B. J. Cady, United States Veterinary Field Agent, Agricultural Experiment Station, Berkeley, California.

SILAGE GOOD AT ONCE

"Save waste by feeding silage as soon as the silo is filled if you want to," says J. G. Watson, of the Missouri College of Agriculture. "It is not silage, but only green corn, finely cut, until heating and fermentation have proceeded for a few days, but the animals like it. Such early feeding makes use of a top layer that is usually allowed to spoil. If it is allowed to rot, put it where no farm animals can reach it or trouble may result."

Milk begins to sour within a few minutes after it is taken from the cow if it is not cooled. The bacteria that cause souring do not thrive in cold milk. Therefore, to keep your milk or cream sweet, cool it without delay.



Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Vaccinating for Black Leg

Last winter I lost some calves with black leg. I have vaccinated my young calves this summer. Is it necessary to vaccinate them again?—Subscriber, Yermo.

Vaccinating against black leg is said to last from six months to one year in young calves. It will be safest to vaccinate again just before the time you had the outbreak last year.

Cancer

What, in your opinion, is the trouble with a cow with a sort that started with a swelling under the left eye and from that there seem to be raw looking little growths something like warts that appear wherever it is open? At present there are three of these growths in the large swelling and one in the corner of the eye on the eyeball, and the eyeball is losing its natural color and is turning greenish. The cow seems to be in good condition otherwise and in good flesh. Would you consider the milk good for family use? What can be done for the cow?—Subscriber, Alpaugh.

It is probably a cancer and incurable. Do not know whether it would affect the milk or not but think not. If it has not gone too far it would not affect the parts used for meat.

Bony Tumor

I have a seven-months-old colt that has a sore under its jaw where the halter strap goes, the size of a quarter. There is a scab on it that matters some. When I feel of it there seems to be a lump two inches in diameter on the bone. It does not seem to hurt the colt and is not very noticeable.

What shall I do for it?—Subscriber, Orland.

It may be due to irritation from a tight halter, an injury or an ulcerating tooth. Change the halter so it will not touch the parts and rub on a good

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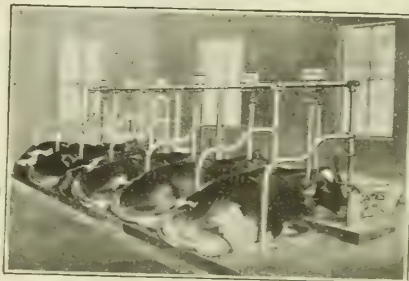
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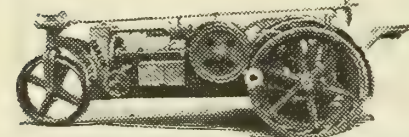
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Several Imperial Valley ranchers have made test plantings of rice this year.

liniment once a day. If it grows larger it is probably due to an ulcerating tooth and that will require the services of a veterinarian. If it is only due to irritation from the halter it will soon disappear.

Tuberculosis

I have a Holstein heifer with first calf that has recently developed a very hard lump on her throat. It is about the size of a large orange and is extremely hard to the touch. She does not seem to be affected by it either in appetite or milk production. Can you state what it may be and suggest a remedy?—Subscriber, Anaheim.

Probably it is a tubercular abscess. First have her tested for tuberculosis by a good veterinarian. If there is reaction he will advise you what to do with her. If there is no reaction then have the tumor removed by dissecting it out. The veterinarian who does it will give you a lotion to heal the wound.

THE GREAT CATTLE SHOW

Continued from Page 393

dividuals of the beautiful and refined "Island" type and others that have been bred with butter production as the first requirement and finish and trueness to this type second. The Jersey show alone is worth coming a long way to see.

Guernseys

There is a big show of Guernsey cattle, an exhibit that is an indication of the growing popularity of this breed on the Coast. There are cows in the show that have made big official records and others that have been winners of important prizes not only in this country but in the Island of Guernsey. Much time can be profitably spent in the study of dairy perfection and quality among the Guernsey herds.

Many California breeders are represented.

W. H. Saylor, editor of the Pacific Dairy Review, San Francisco, and a great dairy authority, has a splendid exhibit from his famous herd, and attention is called to the great bull at the head of his herd and his get. It is a great lesson in the value of a high class sire.

W. H. Dupee of San Diego has maintained a herd of excellent animals on display at the exposition in the interests of the breed for some time; these are now entered in the show.

The Lathrop herd from Palo Alto, which has been exhibited for years at the state fair is here, as are splendid representatives of A. B. Humphrey's herd at Mayhews.

The Northwest is represented by D. H. Looney of Jefferson, Oregon; A. L. Gile of Chinook, Washington, and the Oregon Agricultural College at Corvallis.

The university farm at Davis has a few good Guernseys in the show, and there are representatives from the herds of J. Smith and Dr. J. H. Henderson of Berkeley and L. H. Albertson of Santa Clara.

Secretary W. H. Caldwell of the American Guernsey Cattle Club is in attendance, and the cattle are being judged by Chas. L. Hill of Rosendale, Wisconsin, one of the great constructive breeders of dairy cattle of the world and the foremost Guernsey authority in America. Those who have an opportunity to follow his work will be particularly fortunate.

Holsteins

In point of numbers the show of Holsteins is not representative of the strength of this breed in California and on the Pacific Coast, but there are many individuals of superior quality on exhibit.

The herd of the Carnation Stock Farms, Seattle, Washington, is installed in the beautifully decorated barn in which the Shire horses of the Blackhawk Stock Farm, San Mateo, have been stabled all summer.

The Panama-Pacific Dairy Company, of Sutter Creek, has a nice display, and the Pacific Northwest is well represented by Wm. Bishop, Chimacum, Washington, and J. L. Smith of Spokane, Washington. Holsteins are being judged by W. H. Standish, Lyons, Ohio.

Ayrshires

One of the attractions of the show is the exhibit of Ayrshires. Over 100 head of this hardy Scotch dairy breed are being shown by W. J. Domes, Crescent Hill Farm, McCoy, Oregon; E. B. McFarland, San Mateo; J. W. Clise, Seattle, and the Oregon Agricultural College, Corvallis. Hugh Van Pelt, Waterloo, Iowa, is placing the awards.

"Why do you breed Ayrshires?" was asked Mr. Domes, and he replied: "They are the best rustlers I know of and will stand more grief in our cold, raw, rainy winter weather in the Willamette Valley. And that they are proving popular in the hill lands of California is shown by my sales here. In January of this year I sent 14 bulls to California and from my herd of about 100 breeding animals I have sold 68 this year."

Dutch Belted—Swiss—Red Polled

There is a big show of Dutch Belted cattle from the Strader herd at Ceres.

One herd of Brown Swiss is represented, that of B. P. Inman, Junction City, Oregon.

There are two good herds of Red Polled cattle on exhibition, those of R. R. Cartwright, Angels Camp, Calaveras County, and F. J. Porter, Halsey, Oregon. Secretary Harley A. Martin, Gotham, Wisconsin, of the Red Polled Cattle Club, is in attendance and the judging is being done by Elliot Davis, Lincoln, Nebraska.

Beef Cattle

It is a great disappointment that more beef cattle are not shown. There is a big future in California for the producer of high class beef, and a big show would have been of benefit and a source of encouragement.

Shorthorns

Had it not been for the quarantine over 300 Shorthorns would have been shown. There are only about 50 here now.

The Hopland Stock Farm of Hopland has a big show of good individuals in charge of Wm. Sim, a very capable feeder and fitter. The Allen Cattle Company of Colorado Springs, Colorado, is represented by a good show, and bears the distinction of being the "farthest East" herd on exhibit. There are a few animals in the Shorthorn herd from Nebraska and Oklahoma but no full herds are here from east of Colorado.

A. Chalmers of Forest Grove, Oregon, has a herd of dairy Shorthorns. On a big banner he announces that he requires no nurse cows to assist in the raising of the calves from his cows and that they are Shorthorns, not Durhams or Shorthorn Durhams or Bull Durhams.

The judging is being done by Captain Robson of Canada, and the American Shorthorn Breeders' Association is represented by Secretary Frank Harding. This is one of the strongest breed organizations in the world, and is doing splendid work in the interests of both new and old breeders. Representatives will advise with any who wish to buy registered Shorthorns and assist them in buying what they want. This service is free. Secretary Harding has just returned from a trip to South America. We need more good Shorthorns on the Pacific Coast.

Herefords—Aberdeen—Angus

Hereford cattle are shown by the Kern County Land and Cattle Company of Bakersfield and Geo. Chandler, Baker, Oregon.

Some of the best beef animals in the show are the Herefords and Aberdeen-Angus shown by the Davis Farm of the University of California. Great credit is due to Prof. G. H. True, Prof. J. I. Thompson and others of the animal husbandry department for the breeding, selection and finishing of these superior animals, and the state is fortunate in having the live stock affairs of its great educational institution in charge of such capable and efficient men. The Davis farm steers are among the sensations of the show.



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Poultry for Profit

THAT ELUSIVE FALL EGG

Written for the California Cultivator
By Jean A. Koethen.

THE producer of fall eggs, it is now generally conceded, must be a pullet. An older hen may lay, and she may not, but you cannot say "must" to her. We have tried the experiment of hurrying the hens through their annual dressmaking in hopes of inducing them to shell out October and November eggs only to find that while it is easy to force the molt it is by no means so easy to force laying after the molt.

You can give a hen new feathers,
But you cannot make her lay.

With the pullet the case is precisely the opposite. Given proper breeding, well-timed hatching, and careful feeding and exercise, she simply must lay, that is all there is about it. A pullet that doesn't lay when she is "ripe" is an anomaly.

Breeding, hatching, feeding, it sounds as simple as A, B, C, and yet there is never a fall that the same old wail doesn't rise, "Pullets don't lay." If they do not, there is a reason somewhere, and every poultry keeper must find out for himself where the hitch is.

The other day a lady who has kept hens many years showed me a lot of Leghorn pullets. All but one had red combs, and most of them were laying. "What do you suppose is the matter with that one?" she asked, pointing to the combless one. "She is just the age of the others. Why doesn't she lay?" The pullet she pointed out was a plain runt, undersized, no comb development at all, one of those backward birds that are to be found in every flock. The only thing to do with them is to eat them, for a Leghorn pullet that at six months looks like a half-grown chicken will never be worth her salt. Just why this is, so is not so easily explained except by saying that the bird is lacking in vigor or she would have made a better growth. These immature pullets should be removed from the flock the first of October and fattened for market.

Selection Necessary

A neighbor who usually has a productive flock of Rhode Island Red pullets, though she does not breed them, complained last winter: "My pullets are not laying as they did last year. I bought my eggs from the same party, too." The explanation is obvious. Her pullets of the year before were hatched from eggs laid by bred-to-lay hens and fertilized by a male bird that was the son of a prolific layer. There was no reason, of course, why the hatching eggs of the following year should not have been laid and fertilized by the same sort of stock, but they evidently were not. Probably the selection of the breeding stock both years was a matter of chance, but in the one case the lot fell on the wrong birds, while in the other they happened to be good breeders. It costs some care and trouble to know just which are the best layers in a flock, and which males are

sons of these layers, but bands are cheap, and they may be had in several patterns and colors, so there is no reason for not knowing all you want to know about your flock. It is well to mark the pullets that lay earliest and the hens that molt latest. An averaging up of these two kinds of bands gives a pretty fair idea of which hens are the proper mothers for next year's flock, and a setting of eggs from the best one or two of those hatched under one hen and either toe-marked or kept by themselves till they are ready for bands, will provide the cockerels for next spring's breeders.

Pullets from stock that has not been bred to lay may lay at the proper age, but they will not lay as many eggs as the bred-to-lay pullets and will usually not lay so early.

Hatch Early

When must pullets be hatched to assure their laying by the first of November? There is a difference in breeds, though not so great a difference as we are sometimes led to believe. Leghorns often begin laying at five months and always by six, if they are properly bred. The heavy breeds are generally a little later, but many of them begin at five months or a little past. My Orpington pullets, hatched the fifteenth of February, began laying in August, and one or two of them ten days before they were six months old. I have had them lay even earlier, but this is not desirable.

In choosing the best time for hatching, the poultryman has to steer between the Scylla of fall immaturity and the Charbydis of fall molting. February is a splendid month for hatching the heavy breeds in California, but February pullets are more likely than not to molt in October and November. Mine have not dropped a feather yet, but I am holding my breath. If they do not molt, I shall lay it to their having roosted in trees all summer. They were never under a roof until they were placed in the laying house the first of October.

In March pullets the fall molt is believed to be induced either by too heavy feeding or by roosting in crowded or overheated quarters. This overheating helps to loosen the feathers, and then refeathering is a necessity. Experts are investigating this matter of the fall molt, and these are their findings so far. It is a question, however, which every poultry keeper can investigate for himself. Try letting your March pullets roost out of doors and see whether they molt or not. If you cannot provide trees, you can let more air into their houses. Pullets hatched after the middle of March rarely molt in the fall, and those hatched earlier should not.

April is believed by many to be the very best month for hatching Leghorns, but I doubt if it is as good a time in California as March. We have to consider the depressing heat of June and July, not everywhere, but in many districts, and the shortage of green feed where water is scarce. March chicks have a bracing natal month and unlimited green food, if they are on range, for three months. This gives them a start which later chicks often fail to get.

Feed Abundantly

The pullet that is to be brought to laying maturity at the right time must be well fed, not with forcing feeds, lest she lay before she has attained her growth, but with plenty of good grain and a mash not too rich in protein. My pullets this summer had a great deal of steamed rolled barley and mated well on it. This was usually given in the morning after steaming all night. Sometimes, instead of the barley, I gave the moist, warm mash in the morning more frequently. The composition of the mash was the same as that of the mash given to the molting hens, and differs from that of the laying pullets only in quantity of beef or fish scrap. The mash I am now feeding both pullets and hens consists of (by measure) 2 parts bran, 1 part ground oats, 1 part alfalfa meal, 1 part middlings, and about 1/2 part of fine beef scrap. The amount of beef scrap is varied according to the condition of the droppings. If they look like molasses I know I am using too much beef scrap and immediately cut down the amount. During the summer I used barley meal instead of ground oats.

A moist mash, rich in vegetables, does push the pullets along, and though it may be a little too forcing for us in the summer, is fine for fall. When once the pullets have begun to lay it may be given daily.

Green cut bone is one of the best of forcing feeds. I have found that my hens lay well without it, but I believe its use regularly twice a week would increase the egg yield considerably.

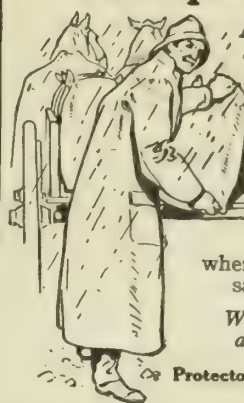
It is not necessary, I am sure, to remind those who are fortunate enough to have sour milk for their hens that there is nothing better. For some reason, the sour, clabbered milk is better than either sweet, skim or thin sour milk. It is better to use it for moistening the mash than to set it before the hens in a pen. When it is set out in this way, it soon becomes foul, the feathers of the hens are smeared, and, if any is spilled upon the ground it makes a breeding place for worms. Mix your dry mash with the clabbered milk, chop in a little lettuce or cabbage, and see how the hens sing and talk as they crowd around.

Exercise Develops Egg Organs

It is too late, when it is time for eggs, to begin to talk about exercise. The pullet that is to do her share in filling the November egg basket should have been exercising all through the months from the day she left the shell. She should have had free range as a baby chick, and all possible room as a growing pullet. The custom which prevails among many eastern breeders of farming out their chicks, that is, sending them to farms to be raised on free range, is one that cannot be too highly commended, and one that many California specialists would do well to follow. The pullet that is raised in confinement may prove a good layer this fall, but her daughters, if they, too, are raised in confinement, will deteriorate somewhat in vigor, and if new, range-raised blood is not introduced it is only a question of time till the whole flock is run-down and unprofitable.

It does not pay to sell thrifty, early pullets at any price as broilers if there is any place to keep them for fall and winter layers. This is a good time, however, to begin culling. Discard all that are not right up to the mark in vitality and size, keeping only those that show strong vigor and rapid growth. These are the ones that will develop into early layers.

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Acknowledgment of Contract

Is it necessary in an agreement of sale of property for it to be acknowledged before a notary?—Subscriber, Santa Barbara.

An agreement of sale is perfectly valid between the parties without being acknowledged; acknowledgment is only necessary to entitle the instrument to be recorded.

Workmen's Compensation

I own a small piece of land which I am improving for a home and on which I am raising a lemon grove. I wish to dig a well and build a house with basement. Some boulders must be blown up with dynamite and the granite in the well must be loosened with powder, also a carpenter might be injured by a fall. Would I be liable for damages in case of accident to any of the workmen, or being a rancher am I exempt?—Subscriber.

The workmen's compensation act excludes from its operation any person whose employment is casual and not in the usual course of the trade, business, profession or occupation of the employer. It also excludes any employee engaged in farm, dairy, agricultural, viticultural, or horticultural labor, stock or poultry raising or household domestic service, hence under both of these exclusions there will be no liability under the workmen's compensation act, but that does not mean that there is no liability for damages in the ordinary civil action, grounded upon negligence.

THE BURDEN

There is a story of an old man who toiled wearily along the dusty highway, with a cumbersome sack thrown over his shoulder. His face was wrinkled and seamed, and his voice, as he complained to every chance traveler of his burden, was querulous and unhappy.

An angel, passing by, stopped to listen to him.

"What do you carry in your sack, brother?" he asked kindly.

"My troubles," answered the old man.

"Let me look at them?" asked the angel.

The old man dropped his sack to the ground and, leaning over it, he painfully untied the cord which was bound around it. They both stooped over and looked in.

"Why!" said the angel, "there is nothing there!"

"That's queer," said the old man. "I had two burdens so heavy that I could scarcely stagger along under their weight."

"What were they?" asked the angel.

"One was a burden of yesterday," replied the old man. "I guess I must have dropped it awhile back, but I didn't know it until just now."

"And the other?" said the angel.

"That was a burden of tomorrow," explained the man. "I don't know what's become of it. I certainly thought it was there!"

"How about today's burdens?" asked the angel.

"Oh, I can always get along with what happens right at the time. Nothing has ever come to me that I could not endure for the moment. Well, I guess I might as well leave my sack here, seeing it is empty."

With a light step and a cheery whistle the old man went on his way. It was no longer dusty, but blossoming with flowers.—Grand Traverse Herald.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Cover Crop

Your article on cover crops in the September 30th issue interested me, particularly that part touching upon *Melilotus indica*, which I take to be the yellow clover. I have an orange grove and desire to try it, but I do not see how it can be plowed under much before a year after it is sown unless its habit of growth is different from that of the ordinary red clover. Would like to know whether it can be sown, say in November, or shortly after the crop has been picked, and will it grow fast enough to plow it under before the first irrigation is required? If this clover was permitted to grow for a whole season would it hamper the work of irrigation (we irrigate by furrows)? It would be almost impossible to draw the furrows while the clover was standing in the orchard.—Subscriber, Oroville.

Where the crop is picked as early as it is in Butte County perhaps it would be impossible to get *melilotus* thoroughly established before the tramping might injure the young plants. Certainly if planted this late that would be the case. For this year we would suggest the immediate planting of the *melilotus* in each alternate "middle" leaving the other section to drive in to gather the fruit, urging pickers to protect so far as possible the section where the *melilotus* is planted. Another year plant the entire orchard a month or six weeks earlier than this. After the cover crop is drilled in, or broadcasted as the case may be, then lay the furrows for irrigating before the seed starts. Then if a dry season comes the cover crop may still be encouraged by winter irrigation, also the ground is in condition for irrigating so as to aid in plowing under in case of no late spring rain. Unless there is an abundance of water for summer irrigation it would not be safe to try and carry the crop through the summer. To wait until after the crop is picked, even if it is shipped out in November, would be to secure almost no winter growth.

Laying Out Orchard

Please give information as to method of laying out walnut orchard.—Subscriber, Alhambra.

Some planters prefer 30 feet, far more 40, and a very few 50 feet apart, and trees set square. At 30 feet apart you will need 48 trees, 40 feet apart 27 trees, 50 feet 17 trees

Protecting Small Trees from Frost

Last spring I planted some orange, olive and fig trees for home use, and as they often freeze in the winter in this locality I would be pleased to have information how best to protect them, especially the orange trees.—Subscriber, Kingsburg.

The most common method of protection from frost for young citrus trees is through the use of cornstalks. Stalks having considerable foliage are set immediately around the trunk of

the tree and tied so that the top of the corn comes up and to a certain extent forms a funnel-shape around the top. The dirt is then raked around the bottom and packed so as to give additional protection. Of course in case of severe frost some of the tips may be frozen but this protects the trunk and the main part of the branches. Where only a very few trees are to be protected the setting over them of barrels or large boxes from which both ends have been removed is good. We have seen a barrel set over a citrus tree, the upper end of which came within a few inches of the top of the small tree projecting through the barrel and a severe frost took off almost the entire top on a level with the barrel. All within the barrel was protected and started nicely the coming spring. Four light stakes are sometimes set in the ground, each say about one by two inches, and high enough to come well above the trees, braced so as to support each other and covered with burlap. It is well to leave the top unprotected, or at least have covering that can be removed when there is no danger of freezing. Even where frost protection with orchard heaters is to be undertaken this precaution with young trees is advisable in exposed sections.

Rust on Snapdragons

One of our readers writes that she finds some kind of leaf rust on snapdragons that were sent from the East and wishes to know what to do for them as she fears some are dying.

There is no remedy possible whereby one may keep the plants and every plant is endangered by the presence of the disease. Pull up and burn at once all plants showing rust and watch the remainder and at the first sign of disease, destroy every infested plant, being careful to pick up every fallen leaf. This is a most serious trouble in many parts of the country, and only the greatest care and immediate destruction will stamp it out of the garden.

Black vs. White Hogs

Can you tell me why the preference in California, where there is practically eight months of warm weather, runs to black hogs or black with only a little white? Black is known to absorb the heat and one would naturally suppose that a white pig would stand the heat better. Can hogs be grown profitably without green alfalfa? Have only a ten-inch stream of water, which would not be sufficient for alfalfa but could grow such crops as corn or other green fodder.—G. L. Waring, Santa Monica.

We do not question but that our subscriber would be able to raise white hogs successfully in a section with a climate like Santa Monica, but in the warmer interior valleys greater care must be exercised to prevent blistering and various skin diseases. However, even in the warmer valleys there are some who maintain that the white hog has a great future. Whether there is a material reason why the black hog is more popular in

California than the white we cannot say. Sure it is there are many more blacks than whites. We are told the whites are, however increasing in number in this state. We think without question hogs may be profitably grown without alfalfa. However, in this state under proper conditions alfalfa can be produced cheaper than any other feed. The best way of handling the small stream on alfalfa would be by the use of a reservoir and then supply in larger heads.

Enlarged Crop

There are a number of persons in this district whose turkeys are suffering from a distention of the crop. A number of the birds die. The symptoms are a gradual enlargement of the crop until in many cases it touches the ground. We have opened some of the crops and there has been discharged therefrom a pint or more of liquid of a nauseating odor. This discharge relieves the bird for a time but in a few days the crop begins to fill again and becomes as bad as before.—Subscriber, Pond.

Enlarged or pendulous crop is due to irregular feeding or to overfilling or too slow emptying of the crop. Robinson says: "If a fowl is fed heavily, and from any cause, as indigestion, the crop remains full and distended too long, though this condition may in time be relieved in the natural way without interference of the keeper, the effect on the crop is the same as if the overloading had occurred because of irregular feeding. If this condition is repeated several times the walls of the crop become in some degree permanently distended." Turkeys, which are unable to digest the quantity of food chickens can take care of, seem especially susceptible to this trouble. This condition is sometimes relieved by

bandaging the crop with a firm, soft bandage, taking care that it is loose enough to allow a partial filling of the crop. If the crop hangs too low for bandaging the only remedy is an operation. Cut out of the enlarged portion of the crop a diamond or oval shaped piece of tissue about two inches long and one inch wide. Sew the edges together with white silk, making each stitch by itself and tying a knot that will not slip. The inner tissue and the outer skin should be sewed separately. Keep the bird by itself for a week, feeding soft food. Unless the birds are very valuable it would be better to market them than to attempt this operation. Salicylic acid, one grain to an ounce of water, is recommended for correcting the acidity of the contents of the crop. Salmon recommends two grains of subnitrate of bismuth and one half grain of baking soda in a teaspoon of water.—J. A. K.

Ticks on Dogs

What shall I do for ticks on dogs and cats? They are kept clean and given baths but the pests persist in remaining. Also, how can I keep fleas away?—Subscriber, Escondido.

Any pest as large as the tick should be picked off and dropped into the stove, then the kennel should be thoroughly treated with bichloride of mercury solution and the animals' bedding should be burned. As to fleas, lice and other mites insect powder is the safest to use around the animals' eyes and ears. Good fresh buhach will work if used persistently. Where fleas and lice have secured a foothold absolute cleanliness, or rather ridance, of all dust-laden places, with liberal use of the insect powder and the bichloride of mercury solution, or even of boiling water, works wonders. The use of carbolated vaseline is also effective.

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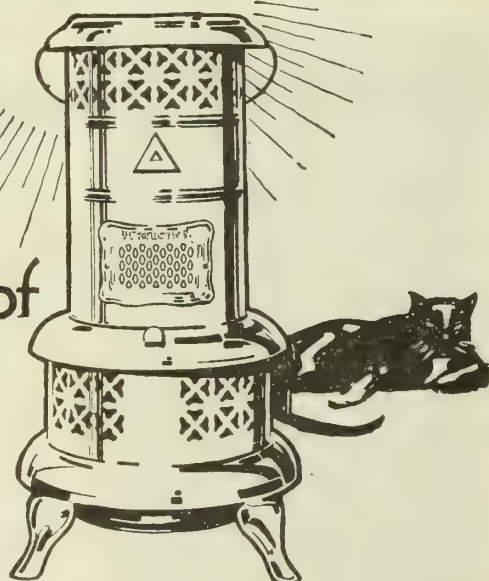
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The Household Department



HAD I MY CHOICE

By Elsie V. H. Baldwin

Had I my choice these are the things I'd ask:

A little leisure for a well-loved task;
A quiet hill, where Space unfolds her wings
And winds are fresh and breathe of far-off things,
Where winter snows fall crisply on the sod,
White and unspoiled just as they come from God,
Where summer heat descends with life, not death,
Because untainted by the city's breath;
A little house, where friends may come and sit;
An open gate whereon this motto's writ:
"Good friend, behold beneath these trees
A gate that loves a guest;
Here he who walks may wait at ease
And he who runs may rest!"

THE HOUSEHOLD CONTEST

NO request comes to us more often than does the one that we ask for suggestions for school children's lunches. This is a subject that has been much discussed, but if our subscribers want more school lunches, more school lunches we will have.

Two dollars in cash will be given for best suggestions, \$1 for second best. All those published will entitle sender to three months' extension of subscription to the California Cultivator if such extension has not already been given this year. With suggestions send name and address of member of family now subscribing for the Cultivator that the three months' extension may be properly credited. Or it may, of course, start a new subscription.

All suggestions should be in this office by the morning of Thursday, November 18. Please use one side of paper only.

We are always open to suggestions for future contests.

Prize Winners

First prize, Mrs. M. L. Bernéike, Santa Ana; second prize, Mrs. D. D. Dettweiler, Alta Loma.

USE OF DRIED FRUITS

Written for California Cultivator
By M. Louise Bernéike, Santa Ana

Do not stew dried fruits. Save time, fuel and fruit flavor by the following method of preparation:

For fruits that have been sulphured, as peaches, apricots, apples and pears, wash thoroughly and let the last washing be on a sieve so that no particle of sand shall remain. Next cover the fruit with three or four times its own bulk of water, in which let it soak for at least 12 hours, or until it has reached the bulk which it had before drying. Now pour off and throw away the unabsorbed water and drain the fruit thoroughly on a colander, thus getting rid of most of the sulphur compounds and excess of acid. Meanwhile, prepare sufficient syrup of sugar and water to cover the fruit. Place the drained fruit in a dish and over it pour this bubbling, boiling hot syrup. Let stand till cold and it is ready for the table.

The amount of sugar used in the syrup must necessarily vary with the acidity of the fruit and the taste of the consumer. For apricots two parts of sugar to one of water is usually satisfactory. If a very rich syrup is used you will have preserves.

For making pies and puddings the drained fruit is used precisely as if it were fresh fruit. No stewing is necessary.

For such fruits as raisins and prunes, which have not been sulphured, it is not necessary to discard the water in which they have been soaked. It may preferably be used in preparing

the boiling syrup to pour over the fruit.

Walnut-Fruit Butter

Grind one teacup of walnut kernels fine and follow by one soda cracker. Mash one cup of pulp of dried fruit prepared as above for the table and mix thoroughly with the ground walnuts and cracker. If not sufficiently moist add a little of the syrup until the mixture has the consistency of jam. This is particularly fine when made of apples, raisins, figs or prunes. Sandwiches filled with this are fine for the school or picnic lunch. Fresh fruits may be used when in season, in which case sugar must be added to suit the taste.

DRIED FRUIT RECIPES

Dried Peach Butter

Stew dried peaches thoroughly, mash and put through sieve. Add one third as much sugar as fruit. Add spices to taste.—Mrs. C. W. Opple, Orosi.

Mock Cherry Pie

Where fresh fruits of all kinds are so plentiful and easily obtainable as in Southern California dried fruits are to some extent at a discount. There are many ways of using these, either alone or in combination, that give variety and add to the healthfulness of the diet. All dried fruits require soaking and very slow careful cooking. A little salt added while cooking serves to restore original flavor. Prunes may be soaked and cooked very slowly then sweetened slightly. To many tastes they are sufficiently sweet. Then add whipped cream and you have a fine dessert.

One cup cranberries, one cup sugar, half cup seeded raisins, chopped, a little water. Bake in deep pie pan.—Mrs. Geo. F. Herrick, Riverside.

Dried Peach Pie

Cook dried peaches until tender, chop fine, sweeten to taste, add a teaspoon of nutmeg to each pie. Bake with strips across top instead of upper crust.—Mrs. J. W. Brown, Goshen.

Dried Apple Cake

Soak two cups of dried apples overnight. Drain and chop fine and boil two hours in three cups of molasses. Let the mixture cool, then add two cups of seeded raisins, cloves, cinnamon and allspice to taste. Mix with cake batter made of one and a half cup brown sugar, one half cup of melted butter, four eggs, four and a half cups of flour, two and one half teaspoons of soda and bake.—Miss Mary J. Harvey, Santa Rosa.

Prune Whip

Stew 24 prunes until soft, let cool, mince very fine, beat the whites of six eggs until very dry, as you would for angel food; then add six tablespoons of powdered sugar. Now stir in very carefully the minced prunes. Bake 45 minutes in a pudding dish set in a pan of hot water. Serve with whipped cream.—Mrs. F. O. Roberts, Kerman.

Prune Whip

One third cup prunes, whites of five eggs, half cup sugar, half tablespoon lemon juice. Pick over and wash prunes, then soak several hours in cold water or until soft. Remove stones and rub prunes through a sieve. Add sugar and cook five minutes. The mixture should be of the consistency of marmalade. Beat the whites of eggs until stiff, add prune mixture gradually. When cool add lemon juice and pile lightly on a buttered pudding dish. Bake 20 minutes in a slow oven. Serve with boiled custard sauce or whipped cream.—Mrs. E. J. Pearson, El Centro.

Dried Apricots with Dumplings

Select about 30 halves of dried apricots, wash well and soak in cold

water. When soaked so as to look quite like the fresh fruit cover well with water and add sugar and cinnamon to suit taste. Put on to cook and when boiling well drop in dumplings made of one coffee cup of flour, one heaping teaspoon of baking powder, pinch of salt and enough milk to make thick enough to drop nicely from the spoon. Cover and boil about 20 minutes but be very careful they do not scorch. Serve warm with cream or a sauce made of whole milk, sugar and spice. This recipe will serve six people. A favorite with farm hands.—Mrs. B. B. Barnes, Laton.

Dried Peach Shortcake

Pour boiling water over one pound (or less) dried peaches; allow to stand a few minutes, then the skins will slip off easily. Boil peaches with one cup of sugar, and water to cover, until tender, then mash. They should not be too juicy. Make a rich biscuit dough. Roll out in two equal parts to fit an oblong dripping pan. Put in one layer (one-half inch thick) grease top, place second layer on first, bake. When ready to serve, remove shortcake from pan, lift off top layer, butter, spread peaches between layers and on top. Cut in squares and serve with whipped cream, plain sweet cream, or a sauce made as follows:

One and one half cups brown sugar, one tablespoon corn starch, add two cups boiling water, add one half teaspoon cinnamon, and a little allspice, cloves and nutmeg. Cook until slightly thick. This makes a very substantial dessert.—Mrs. O. H. Payne, Goshen.

Prune Shortcake

Remove pits from stewed prunes and mash smooth. Sweeten and flavor with allspice. Bake two layers of shortcake. When cool spread the prunes between the layers and on top. Top with frosting. Do not spread the prunes on until time to serve.—Mrs. B. W. Hays, Patterson.

California Raisin Pie

To one pound of seedless raisins add one half cup sugar and one pint water. Stew until done. Add strained juice of two lemons and two beaten eggs. Thicken with dry bread crumbs. Bake with one crust. When done cover with whipped cream or meringue.—Mrs. Clara Brons, Fresno.

Delicious Filled Cookies

Two cups sugar, one cup shortening, one cup milk, two eggs, seven cups flour, four level teaspoons baking powder. Flavor to taste. Roll thin, put a tablespoon of filling on one cookie, place another on top and lightly press edges together.

Filling: Two cups chopped raisins, two cups chopped walnuts, two cups sugar, four level tablespoons flour, two cups boiling water. Let come to a boil, add juice of a lemon, cool and spread.—Mrs. Annie Martin, Campbell.

Fruit Rolls

Two cups flour, two teaspoons baking powder, half teaspoon salt, sifted together. Add two tablespoons butter and two thirds cup milk. Knead well and roll to quarter inch thickness. Brush with melted butter and sprinkle with sugar and cinnamon, half cup raisins and two tablespoons citron chopped fine. Roll like a jelly roll and cut into pieces about three inches long and bake in a hot oven about 20 minutes.—Mrs. C. A. Jenks, Hanford.

Raisin Fritters

One cup of yeast or bread sponge, half cup warm milk, salt to taste, three eggs. Beat all together and add flour to make a thick batter. When light add one cup seeded or seedless raisins. Let rise again and fry in hot lard, using a tablespoon to take the batter up with and cutting or scraping it with a knife to give a smooth oblong shape (the fritters should be about the size of an egg when done). Serve warm. Those left over may be heated in the oven and rolled in powdered sugar, but we think they are good enough without it.—Mrs. A. J. Regier, Wasco.

Stuffed Spare Ribs

Place one side or one half the desired amount of spare ribs in a baking pan hollow side up and fill center with a mixture of three cups of dried apples and one cup of raisins, soaked and cooked soft, then drained. Lay the other half of ribs, hollow side

down over this. Sprinkle salt and pepper to taste over top, put enough water in pan to keep from burning and bake in a rather hot oven about one hour or until done, according to thickness of meat.—Mrs. A. H. Stockdale, Pasadena.

Jellied Prune Ring

Soak one-third of a pound of prunes over night in cold water. In the morning simmer slowly until soft, stone them and cut in pieces. To the prune juice add enough boiling water to make two cups of liquid. Pour it over two and one half tablespoons of gelatine dissolved in a half cup of water, then add one cup of sugar and four tablespoons of lemon juice. Strain, add the cut prunes and pour in a ring mould. Turn out when thoroughly chilled, fill the center with whipped cream sweetened and flavored with vanilla. Garnish the base of the dish with well plumped cooked prunes and whipped cream squeezed through a pastry tube.—Mrs. D. D. Dettweiler, Alta Loma.

IDEAS FOR THE COOK

Written for California Cultivator
By Isabel Cottle

Breakfast

Oatmeal, Cream
Country Sausage Fried Apples
Johnny Cake, Maple Syrup
Coffee

Lunch or Supper

Cream of Vegetable Soup
Tuna Salad Nut Bread
Apple Pie Cheese
Tea

Dinner

Hamburger Steak Baked Potatoes
Egg Plant, Creole
Lettuce, French Dressing
Prune Roll Coffee

Egg Plant, Creole

Pare and cut a large egg plant in slices, then cut the slices to cubes half an inch or less in diameter. Pour boiling water over the cubes and let cook until tender (about 20 minutes). Melt two tablespoons of butter in a saucepan, add two onions, peeled and chopped fine, half a green pepper, chopped; stir and cook until the onions are softened and yellowed slightly, add the cubes of egg plant, drained, a cup and a half of soft bread crumbs, half a teaspoon of salt, a dash of paprika and about a cup and a half of fresh or canned tomato, cut in pieces; stir until thoroughly hot, turn into a buttered baking dish, cover with three-fourths cup of cracker crumbs mixed with three tablespoons melted butter and let cook in the oven 15 or 20 minutes.

Cream of Vegetable Soup

Wash, pare and dice about three medium sized potatoes, two small onions, also cut up sufficient celery to make one cup and two or three peeled tomatoes. Pour over boiling water and cook until thoroughly tender, then remove from stove and add a small pinch of soda. Add the contents of a small can of condensed cream or one cup of rich milk. Reheat, but do not boil, and serve at once.

Fried Johnny Cake

Sift together a scant half teaspoon of salt and two cups of cornmeal. Pour on just enough boiling water to scald the meal without making it sloppy. Let stand about 15 minutes, then stir in enough rich sweet milk to make a stiff batter. Drop in tablespoonfuls on a hot, greasy frying pan, let brown on one side, then turn and brown on the other.

Prune Roll

Prepare a good biscuit dough, using say two cups of flour to four level teaspoons of baking powder, a pinch of salt and a teaspoon of sugar. Sift these together, then with the finger tips work in about one third cup of shortening. Add sufficient milk to make a dough that will roll nicely. Roll about one half inch thick and spread with pitted, stewed prunes, then roll up, the same as for jelly roll, moisten edges and press together. Place in baking pan and pour around it some of the juice from the stewed prunes, sprinkling over a little sugar,

and bake until brown and well done through. Serve with whipped or thick cream.

HOUSEHOLD QUERIES

Home Made Vinegar

Please tell how to make or start "mother" for vinegar; also how to make vinegar from watermelons.—Subscriber, Clovis.

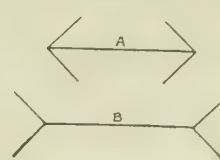
For ordinary household use an excellent quality of vinegar may be most economically made by saving fruit juices, odds and ends of jelly, washed parings of various acid fruits, adding now and then a bit of cold tea or some rain water. These should be put in a stone jar with a clean cloth tied securely over the top and set where the rays of the sun will strike it. To this should be added a small quantity of vinegar or some "mother". Where one is unable to obtain "mother" a bit of brown paper will answer the purpose. As soon as the vinegar becomes strong enough drain off into clean vessels and continue to fill up the jar with fresh juices, etc. Though we have never tried using watermelons no doubt if crushed and used the same as fruit parings they would form vinegar.

Vinegar Without Cider: Take a gallon of cornmeal and boil in water until it is soft; put it into a ten-gallon barrel and fill with strong molasses and water. Two gallons of molasses will be about the right quantity. Leave the bung out and tack a piece of cloth over the hole. In a short time it will be good vinegar. If it should be too weak, more molasses and water can be added or the washings of vessels

Continued on Page 407

Quick—Which Line is Longest,

A OR B?



If you say B is, then something is the matter with your eyes. Your visual power is defective and you should have it corrected at once. A and B are exactly the same length.

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Dr. Hopkins, with his nineteen years' experience in Los Angeles, is probably the best known eye specialist in the city. His large offices are in the Homer Laughlin Building, 315 South Broadway, Los Angeles. He is especially recommended because of his wonderful treatment of all eye ailments and in prescribing and scientifically fitting glasses to the eyes without drugging them.



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San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Oct. 20, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies15
Arizona Longhorn17@17½
California Fresh15
Cheddar20@21
Domestic Swiss19@20
Eastern Daisy18
Imported Swiss40
Longhorn17@17½
Oregon Triplets16@17
Tillamook16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts42
Candled44@46
Northern Fresh Extras, f. o. b. S. F. 48½
Prices to producers:
Hens, lb.13@17
Roosters, old9
Broilers, lb.21
Fryers15
Roasters, lb.14
Turkeys15@18
Ducks13
Geese11
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:
Hogs, 175 to 200 lbs., per cwt.7.00
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug60
Merced, cwt.1.75
Idaho Rurals1.00
Idaho Russets1.45@1.50
Northern Burbanks1.35@1.55
Salinas1.60@1.75

ONIONS

Wholesale selling price:
Boiling Onions, lug1.00
Pickling, lug1.25
Brown Globe, cwt.1.35
White Globe, lug85
Garlic12
Sets—
White, lb.8
Yellow, lb.7

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00@1.10
Beets, doz.30
Beans—
Wax5@5½
Limas5½@6
Green5@5½
Cabbage, sack1.25
Northern, lb.1½@1¾
Carrots, doz.30
Cauliflower, doz.1.35
Celery, doz.50@75
Chicory, doz.40
Chives, doz.1.00
Corn, lug55@60
Cucumbers, lug40@45
Pickling, lug1.00@1.50
Egg Plant, lb.3@3½
Escarole, doz.40
Horseradish, lb.17
Leeks, doz.40
Lettuce, doz.25
Mint, doz.40
Okra, lb.5@6
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone7½@8
Peppers—
Bells3½@4
Chili, lb.3@3½
Pimientos, lb.6
Rhubarb—
Strawberry1.00
Spinach, doz.20
Squash—
Crookneck, box40
Hubbard, lb.1½@2
Summer, lug40@45
Tomatoes—
Lug50@60
Turnips40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower75@1.10
Jonathans1.75@1.90
Peaches, Red90@95
King Davids1.50@1.65
Spitzenberg1.20@1.35
Bananas, lb.4
Berries—
Strawberries, basket8@10
Blackberries, basket8@10
Raspberries, basket13@15
Cantaloupes—
Paul Rose, crate1.50

Casabas, crate1.50
Cranberries, bbl.9.50
Figs—
Black65@75
White65@75
Grapes—
Black Hamburg, lug75
Malagas, lug85
Morocco, lug1.00
Muscats, lug85
Concord, two-third crate1.10
Tokay, lug1.35
Cornichon, lug90
Red Emperor, lug1.00
Guavas, lb.6
Peaches—
Clings, box65@75
Freestones, lug85
Elbertas, lb.1½@2
Pears, Bartlett, packed box2.25
Persimmons, lb.10
Pineapples, lb.4
Pomegranates, lug1.00
Quinces, lug50@60
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons1.75@2.25
Juice Lemons1.25
Grapefruit, Seedless4.25@5.50
Limes, basket1.00
Valencias4.50@5.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, boxes8@9
Apricots9@16
Peaches5@7
Pears, lb.11
Prunes, fancy pack7½@12½

NUTS

Walnuts—
No. 11914 1915
No. 216.50 13.60
Buds12.00 10.60
Jumbos20.00 17.00
See almond quotations by Association under San Francisco.
Feanuts—
California, Raw5@6
Japan5½@6
Eastern7@7½
Chinese5
Pecans17

HONEY

Wholesale selling price:

Comb, Fancy Water White16
Extracted Water White7½@8
White6½
Light Amber6
Beeswax25@26

RICE

Wholesale selling price:

California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:

Limas5.25
Lady Washington5.75
Pinks4.65
Black Eyes4.00
Lentils20.00
Small White5.00
Garbanzos6.00

HAY

Prices to producer f. o. b. Los Angeles:

Barley14.00@15.00
Wheat Hay12.00@15.00
Tame Oat14.00@18.00
Alfalfa12.50@15.00
Volunteer6.00@8.00
Straw5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow2.00
Corn, White2.20
Wheat2.05@2.10
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.50
Barley Seed1.60
Barley, Hulled1.95
Kaffir1.75
Milo1.60
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Alfalfa Meal1.25
Bran, Heavy1.55
Alfalfa Molasses, per cwt.1.35
Beef Scraps3.00@3.16
Beef Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.05
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.90
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.55
Rolled Oats1.80
Middlings1.85
O. & W. Middlings1.80
Feed Meal2.10
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Oct. 19, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras27
Prime Firsts25
Firsts24

CHEESE

Wholesaler to retailer:

Young America18
California Flats15@17
New York Cheddar19
California Cheddar16½
Oregon Twins14½
Oregon Young America, fancy.14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Price to producer:
Fresh, Extras49
Select Pullets39
Hens, lb.13@17
Fryers19@21
Broilers20@25
Roosters—
Young18@20
Old8@10
Squabs2.50@3.50
Turkeys17@25
Ducks10@13
Geese11@15
Belgian Hares—
Live Weight7@9
Dressed12½

LIVE STOCK

San Francisco prices, gross weight:

Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@9
Hogs4@6½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7@7½

POTATOES

Wholesale selling price:

Salinas Burbanks, cwt.1.25@1.45
Delta Burbanks, cwt.60@1.00
Sweets1.25@1.50

ONIONS

Wholesale selling price:

Onions, cwt.60@75
Garlic10@11

VEGETABLES

Wholesale selling price:

Artichokes, doz.20@35
Beans—
String, lb.1½@4
Limas, lb.3@3½
Wax, lb.2½@3
Celery, doz.50@1.25
Corn, sack35@60
Cucumbers, lug25@40
Egg Plant, lug25@40

Okra, lug40@65
Peppers—
Bell, box50@65
Chili, Mexican, lug25@50
Squash, Summer, lug50@75
Tomatoes, lug15@35

FRESH FRUIT

Wholesale selling price:

Apples—
Bellflower50@93
Newtown Pippins70@1.00
Rhode Island Greenings40@70
Jonathans60@1.00
Bananas, Hawaiian, bunch75@1.25
Blackberries, chest4.00@5.00
Cantaloupes—
Delta, lugs75@1.00
Turlock75@1.06
Casabas, crate50@75
Cranberries, Oregon, bu.2.75@3.00
Figs, box, black85@1.25
White50@75
Grapes—
Tokay, crate40@50
Malagas, crate50@65
Muscat, crate50@65
Wine Grapes, Zinfandel, ton 14.00@18.00
Huckleberries, lb.4@6
Muskmelons, box1.50@1.75
Peaches, small box45@60
Pears, Bartlett1.00@1.50
Lake Co.2.35@2.50
Persimmons, box90@1.25
Pineapples, doz.1.25@1.75
Pomegranates, small boxes1.00@1.50
Quinces, box50@65
Raspberries, chest5.00@8.00
Strawberries, chest4.50@6.00
Watermelons, doz.1.00@2.25

CITRUS FRUIT

Wholesale selling price:

Grapefruit, seedless2.50@4.00
Lemons1.50@2.00
Lemonettes1.25@1.75
Limes, Mex., cs.4.00@5.00
Valencias3.75@4.75

DRIED FRUITS

Wholesale prices are:

PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3½c. All outside sections ¼c lower.
Other Fruits. Stand- Extra
50-lb. boxes ard. Choice Choice Fancy
Apricots6¼c 7¼c 8¼c 9 c
Peaches3¼c 3½c 3¾c 4½c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5¼c; 4-crown, 6c.
The above prices are for October, November and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.
Nonpareil 14½c.
IXL 13c.
Ne Plus 12c.
Drake's 10½c.

Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:

Limas4.60@4.70
Pink3.75@3.85
Black Eyes3.25@3.50
Cranberry4.50@4.75
Small White5.10@5.20
Garbanzos3.25@3.50
Large White5.00@5.10
Bayou4.50@4.70
Manchurian Speckled Bayous.4.00@4.25
Red Mexican4.75@5.00
Red Kidney5.50@5.75
Horse Beans2.00@3.60

HONEY

Wholesale selling price:

Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White6½@7½
Light Amber4@5½
Dark Amber2
Beeswax25@28

HOPS

1915

Wholesale selling price:

Sacramento Valley10½@12½
Sonoma-Mendocino13½@15
Oregon-Washington13½@15

HAY

We quote the average wholesale price of hay in carload lots on today's market as follows:

Fancy Wheat Hay (lt bales)16.00@17.00
No. 1 Wheat or Wheat and Oat12.00@15.00
No. 2 Wheat or Wheat and Oat10.00@11.50
Choice Tame Oat14.00@15.00
Other Tame Oat10.00@12.50
Wild Oat8.00@10.50
Alfalfa10.00@14.00
Stock Hay6.00@8.00
No. 1 Barley Straw25@49

WEATHER CONDITIONS

For the Week Ending October 16, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data—Temperature Data

	Past Week	Seasonal to Date	Normal to Date	Maximum	Minimum
Eureka	.06	.43	2.59	68	42
Red Bluff	.00	.00	1.49	80	48
Sacramento	.00	.01	.82	80	48
San Francisco	.00	.01	.80	76	50
San Jose	.00	.04	.77	80	38
Fresno	.00	.00	.60	84	50
Independence	.00	.09	.60	78	36
San Luis Obispo	.00	.01	.88	76	42
Los Angeles	.00	.00	.32	78	52
San Diego	.00	.00	.30	70	54

GRAIN

Alfalfa Seed	1.62 1/2
Wheat, Cal. Club	1.62 1/2 @ 1.70
Blue Stem	1.77 1/2 @ 1.82 1/2
Barley Feed	1.25 @ 1.30
Shipping and Brewing	1.25 @ 1.30
Corn, Eastern Yellow	1.50 @ 1.52 1/2
Corn, Egyptian White	1.50 @ 1.52 1/2
Oats, Red, Feed	1.25 @ 1.35
Oats, Red, Seed	1.45 @ 1.50
Oats, White, Feed	1.35 @ 1.37 1/2
Oats, Black, Feed	2.00 @ 2.25
Millet	2 1/2 @ 3
Rape	2 1/2
Flaxseed	5 @ 5 1/2
Rye	2.00 @ 2.25

FEED STUFF

Wholesale prices.	
Alfalfa Meal, car lots	15.00 @ 16.00
Ran, ton	26.00 @ 27.00
Feed Cornmeal	40.00 @ 41.00
Cracked Corn	40.00 @ 41.00
Rolls Barley, ton	26.00 @ 27.00
Middlings	30.00 @ 32.00
Shorts	27.00 @ 28.00
Oilcake Meal	37.50 @ 39.00
Cocoanut Oilcake Meal	23.00 @ 24.00

Citrus Fruit Market

LOS ANGELES, Oct. 20, 1915.

At present rate shipments of Valencia's will not be cleaned up by the end of the shipping year. It now appears that it will be November 10 before the last cars go forward. The market at present is fair, better grades of fruit being taken at prices about the same as prevailed last week. Lemons are in fair demand.

Shipments

Shipments of oranges from Southern California to date since November 1, 1914: 32,886 cars, lemons 6703, total 39,589. To same date last season; oranges 38,378, lemons 2859, total 41,237. From Tulare County: oranges 5651, lemons 209, total 5860. To same date last season, oranges 5875, lemons 41, total 5916. From northern counties: oranges 670, lemons 2. To same date last season: oranges 404, lemons 5.

NEW YORK, Oct. 18.—Sixteen cars Valencia's, one mixed car and three cars lemons sold. Market generally better on choice grades oranges; lemons unchanged. Fair and warm.

VALENCIAS—	Avg.
Robin Hood, Or. Ex.	\$5.70
Wm. Tell, Or. Ex.	4.95
Mother Colony, S. T. Ex.	4.60
El Pavo Real, S.T. Ex.	2.40
Glendora Heights, Foothill	4.80
Evolution, A.C.G. Ex.	4.10
Charter Oak, S.D. Ex.	5.10
Red Ridinghood, S.D. Ex.	4.35
Glendora Alps, A.C.G. Ex.	4.95
Glendora Home, A.C.G. Ex.	4.15
Monopole, A.C.G. Ex.	3.15
Wm. Tell, Or. Ex.	5.00
Golden Beaver, Or. Ex.	4.45
Golden Cross, O.K. Ex.	3.75
Red X, O.K. Ex.	3.40
Red U. O.K. Ex.	2.70
Glendora Heights, Foothill	4.85
Evolution, A.C.G. Ex.	4.20
Golden Bear, O.K. Ex.	3.05
La Vista, Or. Ex.	4.50
Hill, Or. Ex.	4.15
Red X, O.K. Ex.	2.30
Standards	2.00
Tesoro Rancho, Blue	5.10
Tesoro Rancho, Red	4.15
Red Band	3.40
San Antonio Red, S.A. Orchards	3.30
San Antonio Blue	2.70
Old Mission, xf., Chapman	6.40
Old Mission, fy., Chapman	5.60
Golden Eagle, Chapman	4.70
Lady Rowena, Chapman	3.35
Olive Heights, Growers Ft. Co.	4.25
Angelus, Growers Ft. Co.	3.60
Big Four, Growers Ft. Co.	3.15
Old Mission, xf., Chapman	6.25
Old Mission, fy., Chapman	5.50
Golden Eagle, Chapman	4.55
Lady Rowena, Chapman	3.25
Golden Scarab, Chapman	3.65
Thebes	2.90

SEEDLINGS—	Avg.
Girl	\$2.60
VALENCIAS—HALVES—	Avg.
Red Ridinghood	\$2.10
Hesperides	1.75
LEMONS—	Avg.
La Habra, ventilated	\$2.90
Reliable, ventilated	2.60
Standard, ventilated	2.15
Quail, ventilated	2.50
Coyote, ventilated	2.25
Rossmoyn Groves	3.50
Girl	3.20
Las Fuentes, ventilated	3.35
Montecito Valley, ventilated	2.70
Miramar, ventilated	2.05

ST. LOUIS, Oct. 18.—Five cars sold. Market is easier.

VALENCIAS—	Avg.
Aster	\$1.80
Progressive, Or. Ex.	3.00
Saddleback, Or. Ex.	3.50
Foothill Beauty, Or. Ex.	3.55
Golden Circle, R.H. Ex.	1.80
Crescent, R.H. Ex.	1.10
LEMONS—	Avg.
Pet, S.D. Ex.	\$2.65
Arab	2.70
Greyhound	2.45
Pup	2.30
Duck	1.75

CLEVELAND, Oct. 18.—Three cars sold. Market is steady on oranges.

VALENCIAS—	Avg.
Modjeska, Anaheim, O.G.A.	\$2.95
Bell	2.35
Mt. Lowe, A.C.G. Ex.	2.95
XLO, Or. Ex.	3.60
Foothill Beauty, Or. Ex.	3.00
Saddleback, Or. Ex.	3.25
LEMONS—	Avg.
Canyon, A.C.G. Ex.	\$2.35

PHILADELPHIA, Oct. 18.—Five cars sold. Market is unchanged.

VALENCIAS—	Avg.
De Luxe, xf., Covina Hgts. G.	\$4.60
Outlook, Covina Hgts. Ex. G.	3.50
Gold Seal	2.05
Freedom	2.05
Fort Pitt, A.C.G. Ex.	4.20

Possum, A.C.G. Ex.	2.95
Gold Centers, Or. Ex.	3.25
Plain Ends, Or. Ex.	2.70
Atlas, Or. Ex.	4.90
Hector, Or. Ex.	4.30
Trojan, Or. Ex.	3.55
LEMONS—	Avg.
Purity, Or. Ex.	\$2.15
Evergreen, Or. Ex.	1.85

CINCINNATI, Oct. 18.—Four cars sold. Market firm on good stock, lower on poor stock Valencia's. Unchanged on lemons.

VALENCIAS—	Avg.
Liberty	\$3.40
Valley	2.85
Progressive, Or. Ex.	2.10
Hunter, A.C.G. Ex.	4.00
Possum, A.C.G. Ex.	2.85
LEMONS—	Avg.
Centauria, V.C. Ex.	\$2.60
Lemonspray	2.20

BOSTON, Oct. 18.—Nine cars sold. Market easier on Valencia's, strong and higher on lemons.

VALENCIAS—	Avg.
Glendora Home, A.C.G. Ex.	\$4.10
Monopole, A.C.G. Ex.	2.80
Quail, O.K. Ex.	4.30
Glendora Home, A.C.G. Ex.	4.65
Violet, D.M. Ex.	4.20
Jasmine, D.M. Ex.	3.55
Cherokee, D.M. Ex.	3.10
Sunnyheights, R.H. Ex.	4.60
Sunnyheights, R.H. Ex.	4.00
Crescent Hgts., R.H. Ex.	2.45
Rex, S.T. Ex.	3.00
Standards, S.T. Ex.	2.35
LEMONS—	Avg.
Red Hill, Or. Ex.	\$4.20
Purity	3.80
Trail, A.C.G. Ex.	4.15
Canyon	3.50

CHICAGO, Oct. 18.—Oranges and lemons were easier, owing to abundant supplies and great quantities of other fruits. Oranges, boxes, fancy California Valencia's, 5.25 @ 5.75; choice, 5.00 @ 5.25. Lemons, boxes, fancy California, 300 count, 3.25 @ 3.75; choice, 360 count, 2.25 @ 2.75. Grapes, cases, 4 baskets, Muscat, 90 @ 1.35; Malaga, 90 @ 1.10; Tokay, 85 @ 1.10. Plums, cases, 4 baskets, Silver Egg, 75 @ 85; Italian, 65 @ 80. Pears, boxes, 50 pounds, Howell and Buerre Bosc, and Buerre de Anjou, 3.00 @ 3.25. Clairgeau, 2.25 @ 2.50. Cantaloupes, standard cases, 65 @ 75; pony crates, 50. Casabas, flat cases, California, 75 @ 1.00. Apples, Western, boxes, 4 varieties, 1.60 @ 3.00. Grapefruit, boxes, 2.25 @ 5.80.

CALIFORNIA CREAMERY OPERATORS

The California Creamery Operators' Association will hold a convention at Convention Hall on the exposition grounds at San Francisco, October 28, 29 and 30. In connection with the convention will be a butter scoring contest. The usual fare and a third rate will be granted by the railways to convention attendants. The following program will be presented:

Address of welcome, D. O. Lively, chief of live stock, Panama-Pacific International Exposition; response, E. B. Stowe; president's address, U. H. Roussel; New Laws Affecting the Creameries, F. W. Andreasen, secretary, state dairy bureau; The Butter-maker and the Market, S. H. Greene; Cost of Producing Butterfat, F. H. Dethell, United States dairy division; Pasteurization of Cream for Butter Making, John Solis; Detailed Records, J. C. Phillips; address, A. J. Glover; State Department of Weights and Measures, C. G. Johnson, state sealer; Disposal of California Surplus Butter, E. H. Webster; Milk and Cream Supply of San Francisco, Dr. Wm. C. Hassler, San Francisco health department; Cooperative Marketing of Butter, C. L. Mitchell.

HOUSEHOLD QUERIES

Continued from Page 405

that have contained honey or molasses may be poured into the barrel as they accumulate. Rainwater is best to use. The use of a piece of "mother" will hasten the making. As soon as the vinegar is made it should be racked off or strained and put into clean vessels.

AUCTION OF PURE BREDS

Continued from Page 387

Hollow, Princess Anne Hengerveld, Copa De Ora Sairy, Teake Lyons Colanthal, El Prado Mandel Wayne, El Prado Aaggie Cleopatra, El Prado Colanthal Cleopatra, Milady Cayvan, Lady Hengerveld Holland, Empress Novena Segis, Lady Barnum Sunshine 2d., Copa De Ora Sairy Aaggie Jane, El Prado Vogelschen, El Prado Colanthal Vogelschen, El Prado Daisy, El Prado Pansy.

A. J. Stalder. Arleen De Kol Beets, Westberg Star of Pleasant View, Aaggie Muttertrue De Kol Sunnysdale, Madrigal Sarcastic Girl, Netherland Pride Piebe, Excelsior Parthena, Visalia Princess Tritomia, Rialto Queen of Pleasant View, Aridgara 2d., Cathrina De Kol.

Mr. Van Blaricon. Edna De Kol of Sunnysdale.

E. W. Looney. Lady Day Break De Kol, Calamity Willis, Copa De Ora Holland Novena, Gertrude De Kol, Pauline Nicolina of Pleasant View, Bertha Lincoln Jewel.

Looney & Martin. Pledge Onyx Tubie, Daughter of Pietertje De Kol, Alka Peterbaas, Inka Posch 2d.

J. B. Monroe. Creamelle De Kol of Sunnysdale.

S. D. Van Beek. King Oakwood of Sunnysdale, Arizona Green Valley Mulvie, La Riena Hartzog Hengerveld,



J. W. McAllister, Jr., Manager of the Sale in Center, Col. Ben F. Rhoades, Auctioneer, at His Left and Harold McAllister at Reader's Left.

Heifer Calf, granddaughter of Green Valley Mulvie Beryl, Dolphin Alma Pride.

C. D. Bruner. Niko Chemawa of Sunnysdale. May Westburg De Kol.

L. E. Robertson. June Westburg De Kol.

J. L. Lane. El Prado Colanthal, Merc Segis Pontiac Burke, King Anselmo Colanthal.

E. G. Stephens. Judge Hengerveld De Kol 6th.

Geo. A. Smith. Fern of Sunnyside, Ariadne Westburg Trixie, Lady Pauline Lockhart, Princess Laura of Sunnyside, Trixie De Kol, Morning Dew of Sunnyside.

Eli P. Fay. Countess Zanibar Hengerveld.

R. Orsi. King Kathrena Aaggie, Butterboy Bloom of Sunnysdale.

T. J. Gilkerson. Juliana Starlight De Kol, Monrovi Princess, Holton Mercedes Colanthal Johanna, Lassie Pledge West De Kol, Shirley Pietertje, Queen Pietertje of Sunnysdale.

J. P. Tomi. Felicia of Pleasant View.

E. O. Fawcett. King McKinley Pontiac.

H. W. Haskew. Rouble De Kol Claudia.

R. N. Hudson. Maid Sweet Mignonette.

R. F. Guerin. Emperor Cantate Pietertje.

Wm. Bishop. Contenta Creamcup 2d., El Prado Contenta, Foxy El Prado, El Prado Walhalla.

H. R. Steelman. Isabel Onyx Clothilde De Kol, Wayne Butterboy Olivene.

F. R. Mitchell. Pietertje Segis of Sunnysdale.

A. T. Dolimi. Pauline Aaggie Erma De Kol, Dolphin Alma Pride.

E. L. Fletcher. Dichter Spofford Korndyke Lad.

Dixie Land Company. Niko Wayne Creamelle 2d., Rose Paul De Kol Star. F. Mathos. Segis Pontiac of Sunnysdale.

E. Renaud. Floribel Segis of Sunnysdale, Floribel Pontiac of Sunnysdale, King Segis Pontiac Emperor 3d., Copa De Oro Mabel De Kol 2d.

Roy M. Fletcher. Lady Frosten McKean.

TO GET AHEAD

"To push on in the crowd," says he, "every male or female struggler must use his or her shoulders. If a better place than yours presents itself just beyond your neighbor, elbow him and take it. What a man has to do in society is to assert himself. Is there a good place at table? Take it. At the treasury or the home office? Ask for it. Do you want to go to a party to which you are not invited? Ask to be asked. Ask A, ask B, ask Mrs. C, ask everybody you know; you will be thought a bore, but you will have your way. What matters if you are considered obtrusive, provided that you obtrude? By pushing steadily, nine hundred and ninety-nine people in a thousand will yield to you. Only command persons and you may be pretty sure that a good number will obey. If your neighbor's foot obstructs you, stamp on it; and do you suppose he won't take it away?"—Thackeray.

IN A STATE OF BELLIGERENCY

"Well," said he, anxious to patch up their quarrel of yesterday, "aren't you curious to know what's in this package?"

"Not very," replied the still belligerent wife, indifferently.

"Well, it's something for the one I love best in the world."

"Ah, I suppose it's those suspenders you said you needed."

HAS IT IN THE FAMILY

"My dear," remarked Jones, who had just finished reading a book on "The Wonders of Nature," this really is a remarkable work. Nature is marvelous! Stupendous! When I read a work like this it makes me think how puerile, how insignificant is man."

"Huh!" sniffed his better half. "A woman doesn't have to wade through 400 pages to find out the same thing."—Judge.

FREE UNTIL 1916

Have you subscribed yet for The Youth's Companion for 1916? Now is the time to do it, if you are not already a subscriber, for you will get all the issues for the remaining weeks of 1915 free from the time your subscription with \$2.00 is received.

The fifty-two issues of 1916 will be crowded with good reading for young and old. Reading that is entertaining, but not "wishy-washy." Reading that leaves you, when you lay the paper down, better informed, with keener aspirations, with a broader outlook on life. The Companion is a good paper to tie to if you have a growing family—and for general reading, as Justice Brewer once said, no other is necessary.

If you wish to know more of the brilliant list of contributors, from our ex-Presidents down, you will write for the new volume in 1916, and if you wish to know something of the new stories for 1916, let us send you free the Forecast for 1916.

Every new subscriber who sends \$2.00 for 1916 will receive, in addition to this year's free issues, The Companion Home Calendar for 1916.—The Youth's Companion, Boston, Mass.

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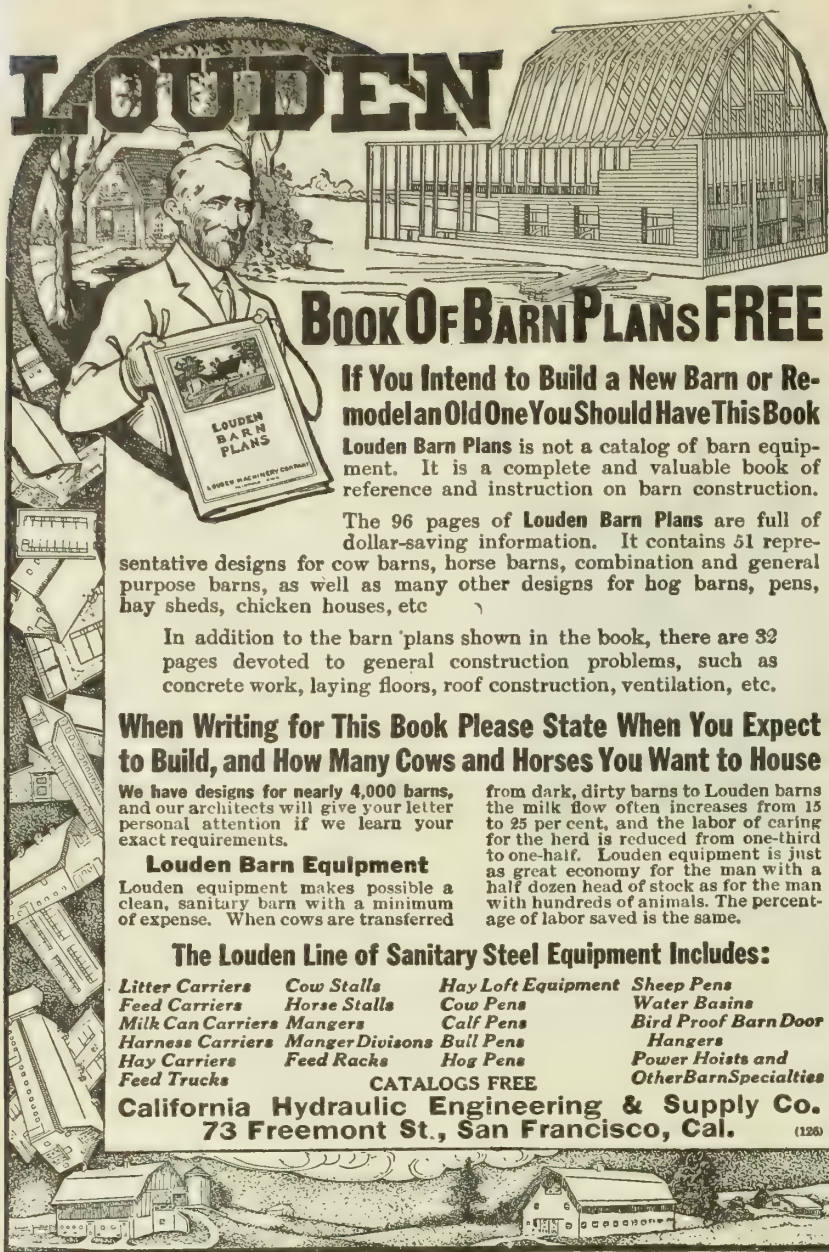
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Louden Barn Plans is not a catalog of barn equipment. It is a complete and valuable book of reference and instruction on barn construction.

The 96 pages of Louden Barn Plans are full of dollar-saving information. It contains 51 representative designs for cow barns, horse barns, combination and general purpose barns, as well as many other designs for hog barns, pens, hay sheds, chicken houses, etc.

In addition to the barn plans shown in the book, there are 32 pages devoted to general construction problems, such as concrete work, laying floors, roof construction, ventilation, etc.

When Writing for This Book Please State When You Expect to Build, and How Many Cows and Horses You Want to House

We have designs for nearly 4,000 barns, and our architects will give your letter personal attention if we learn your exact requirements.

Louden Barn Equipment

Louden equipment makes possible a clean, sanitary barn with a minimum of expense. When cows are transferred from dark, dirty barns to Louden barns the milk flow often increases from 15 to 25 per cent, and the labor of caring for the herd is reduced from one-third to one-half. Louden equipment is just as great economy for the man with a half dozen head of stock as for the man with hundreds of animals. The percentage of labor saved is the same.

The Louden Line of Sanitary Steel Equipment Includes:

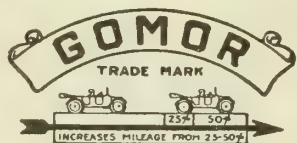
Litter Carriers	Cow Stalls	Hay Loft Equipment	Sheep Pens
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Milk Can Carriers	Mangers	Calf Pens	Bird Proof Barn Door
Harness Carriers	Manger Divisions	Bull Pens	Hangers
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Feed Trucks			Other Barn Specialties

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California Hydraulic Engineering & Supply Co.
73 Freemont St., San Francisco, Cal. (126)

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by using "Gomor," the scientific lubricant. "Gomor" is poured into ordinary gasoline and thus introduced into the motor through the carburetor with the gas. At every explosion "Gomor" is sprayed on cylinder walls, pistons, valves, etc., thus positively eliminating carbon formations. It greatly lessens friction, makes gasoline vaporize quicker and motor run perfectly on very lean mixture. One quart of "Gomor" is sufficient to treat 80 gallons of gasoline. Thus, if your gas tank holds 10 gallons, add one gill (1/4 pint) of "Gomor" when filling.



Positively Increases Mileage 25% to 50%

"Gomor" is a scientific lubricant, and is the invention of a well known Detroit chemist. It contains nothing injurious to motors—it is a great benefit to motors. Do not confuse "Gomor" with any of the ether, camphor or other harmful chemicals that are sometimes employed to temporarily increase speed.

"Gomor" is a high grade lubricant that withstands the heat generated in any gasoline motor. It keeps a thin film of oil on vital parts of the motor that are imperfectly lubricated or inaccessible to usual methods of lubrication. Thus friction is lessened and motor runs with more power. In this way, mileage per gallon of gasoline is increased 25% to 50%—a big saving you will appreciate.

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"Gomor" is not an experiment. Upward of one thousand tests of "Gomor," covering a period of four years, have been made. These tests have been conducted by leading automobile engineers and have been most exacting. Many motor companies and thousands of private owners testify to the merits of "Gomor."

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Friction is the thief of power, and "Gomor" reduces friction to a minimum. "Gomor" saves wear and tear on motors and thereby greatly increases their life. Our exhaustive tests have proved this fact.

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The Gomor Oil Company is a thoroughly responsible concern backed by a number of Detroit's leading business men. "Gomor" is widely used in the East, and is now being rapidly adopted by Western motorists.

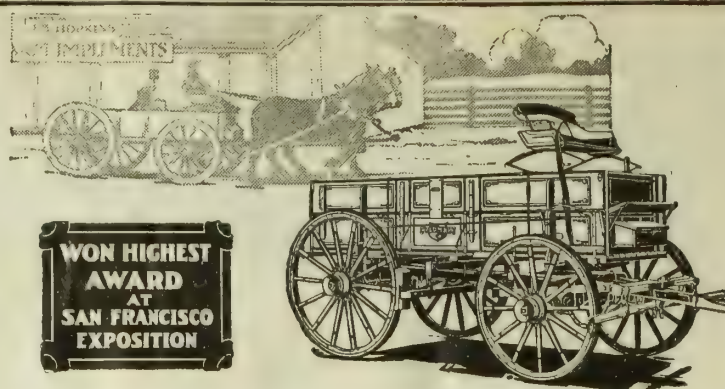
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When you have these figures you will see at once the advantage of buying a **Columbus** or **Weber** wagon. They give you steady service, with no delays. You can get repairs any day you need them. The folding endgate and link end rods make them easy to load and unload. The fifth wheel—an exclusive feature on these wagons—adds years to their life.

When you are ready to buy a new wagon and want the one that costs the least per year of service, drop us a line. We will direct you to the nearest **Columbus** or **Weber** wagon dealer and give you information that will make it easy for you to buy one of the best wagons you ever owned.

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Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

October 28, 1915

SAN FRANCISCO

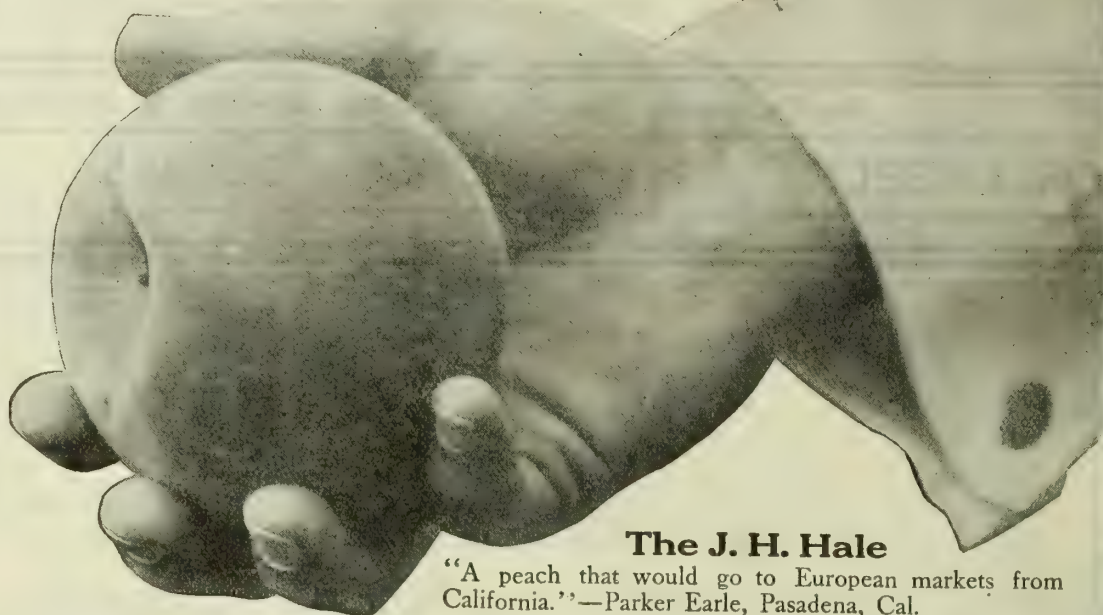


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Panama-Pacific International Cattle Show—Avocado Growers Meeting

J. H. Hale — The Great Commercial Peach For California

- A peach so solid and firm it ships thousands of miles.
- A peach that keeps for days after reaching market.
- A peach of immense size, many weighing a pound each.
- A peach dense and solid, almost like a cling, yet perfect freestone.
- A peach that sells for \$2.00 to \$2.50 per bushel, when Elberta and ordinary varieties are bringing \$1.00 to \$1.50.
- A peach that paid Mr. Hale at the rate of \$1420 per acre.
- A peach of highest quality, flavor, brilliant coloring.
- A peach that makes money no matter what markets are.
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Beware of fakers offering so-called "J. H. Hale" trees, or old "Hale's Early," of no commercial value. There is only **one genuine** J. H. Hale peach, grown by us under exclusive contract with Mr. Hale. Trade-marked tag with Mr. Hale's personal signature is your guarantee and protection. Look for it!

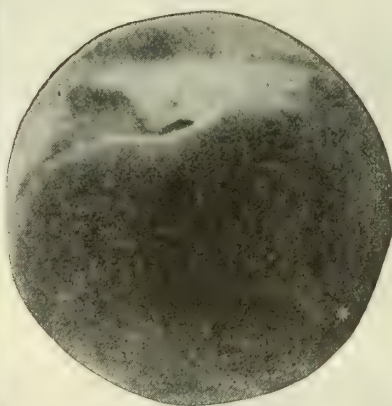


Read how Mr. Hale originated this great peach—how he tested it for 12 years—how he shipped it in a barrel like apples—how he got \$380 MORE per car for J. H. Hales than for Elbertas. Find out all about this wonder peach, its size, beauty, yield, quality, how it sold at highest prices in a season of glutted markets—how it will make money for **you**. Hundreds of acres are being set out on the Pacific Coast. Don't wait. Write for the FREE 160 page Book today!

The Early Rose—The Best of all Early Peaches

Its exceptional quality and flavor, deep, rich rosy color and marked peachy fragrance sold carload after carload on the New York markets in June at 50% to 60% higher than other varieties.

The Early Rose is to early peaches what the J. H. Hale is to commercial peaches—the best quality and highest profit-maker in its class. We are introducing the Early Rose to growers who are looking for an unusually early peach with exceptional quality, and one that is an extra good shipper. Our supply is limited. Write for catalog at once.



The Early Rose paid Mr. Hale \$3.00 to \$3.50 per crate—the highest price of any peaches on the market for a season of over two weeks.

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Everybody knows Delicious—and the profits that it brings. It is the great national dessert apple—beautiful in appearance, dark red striped, firm, crisp, tender flesh, and with a surpassing flavor, mild, luscious and tempting. A plateful of Delicious will perfume a whole room. Delicious is a splendid keeper and shipper—stands lots of handling—brings more per box than most apples do per barrel. Succeeds in lower elevations in California where other apples fail. You can now get genuine Delicious trees direct from William P. Stark at prices you usually pay for ordinary varieties. Write for low growers' prices.



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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 18

LOS ANGELES: THURSDAY, OCTOBER 28, 1915

One Dollar Yearly

The Panama-Pacific Cattle Show Winners

Excellence of the Show and the Winnings of Pacific Coast Entries a Great Tribute to Our Live Stock Growing Conditions. Many Animals of International Reputation Exhibited. Written for the California Cultivator by W. S. Guilford



HE judging of the Panama-Pacific International Cattle Show started on Monday, October 18 and continued without interruption until Saturday, October 23.

It was a great show. There was the keenest of competition and the big crowds both in the judging ring and in the grand stand attested to the interest of Californians and Pacific Coast

the mild climate and the abundance of feed for dairy cattle that can be produced here.

We have better Ayrshires on the Pacific Coast than were ever grown in Scotland, and this hardy dairy breed is rapidly coming into its own in our hill dairy districts.

Our cattle ranges now produce large numbers of high class beef animals, but there is plenty of room for

Shorthorn Cattle

The show of Shorthorns was highly commended by the many live stock authorities in attendance. The prizes were very well divided among the several exhibitors.

The Hopland Stock Farm exhibited 15 head and won 23 prizes, including grand championship bull on the senior yearling, Bobbie Burns.

The Allen Cattle Company of Colorado Springs, Colorado, also won heavily and had the grand champion female in the senior yearling heifer, Belle Cumberland. Mr. Allen states that Shorthorns are in very great demand at good prices all over the intermountain country.

The A. Chambers herd from Forest Grove, Oregon, gave a good account, the aged bull, Scottish Baron, attracting especial attention because of his depth and width of body, masculine head and character and the excellence of his calves.

A few animals of especial merit were exhibited by the Paicines Ranch Company, Paicines, San Benito County, owners of one of the largest Shorthorn herds in the West. This company now owns the famous Howard herd.

The dairy Shorthorn prizes were won by the Misses Alexander and Kellogg of Suisun, with a very attractive lot of cattle.

The interests of the breed were

in the Hereford classes. George Chandler, Baker, Oregon, had the only full herd of breeding cattle. The University of California exhibited a junior yearling bull that many believed should have been made champion of the show instead of reserve champion. A splendid lot of steers and heifers were shown by the Kern County Land Company, Bakersfield, and by the University of California.

Aberdeen-Angus Cattle

This beef breed was represented in the show by one bull and four steers from the University of California, five excellent individuals. The growing of more beef cattle on smaller farms will undoubtedly see a big increase in the numbers of this great beef breed in this state and the university is the leader in showing what Angus cattle will do.

The steer, U. C. Jock, born January 11, 1914, weighs 1410 pounds, and was made grand champion. A steer in the under six months class, California Thickset, is a smooth, evenly fleshed animal that promises to come on and make one hard to beat another year.

University of California Steers

As was indicated last week the wonderfully finished Hereford, Angus and cross bred steers shown by the university farm at Davis were a sensation. They are models of perfection and afforded a lesson of great value to



Prizewinning Red Polled Cow Shown By R. R. Cartwright of Angels Camp.

farmers and breeders in the great live stock industry.

California has been known all over the world for the excellence of its fruit crops, for its oranges and peaches and prunes and everything in the list of fruits and vegetables, and it has been famous for its wonderful climate and splendid resorts, but the importance of the live stock business is sometimes overlooked.

It must not be so. There has never been a permanent agriculture any where on this earth that did not have for its basis a substantial live stock industry. California and the Pacific Coast is coming into its own.

This great cattle show is one of the many evidences of the fact that nowhere in the world can better live stock of all kinds be produced than here.

We all know what our Holsteins can do. This has been written in the records of production of the American Holstein-Friesian Association. The founders of the breed in this state builded well and their efforts have been ably furthered by those who are carrying the banner at the present time.

Chas. L. Hill, of Rosendale, Wisconsin, the judge of Guernseys and one of the great Guernsey breeders of the world, says that no better animals are produced anywhere than some of those exhibited that were grown on the Pacific Coast, and that we unquestionably have a great advantage over breeders any where else because of

many, many more herds of Shorthorns, Herefords and Aberdeen-Angus.

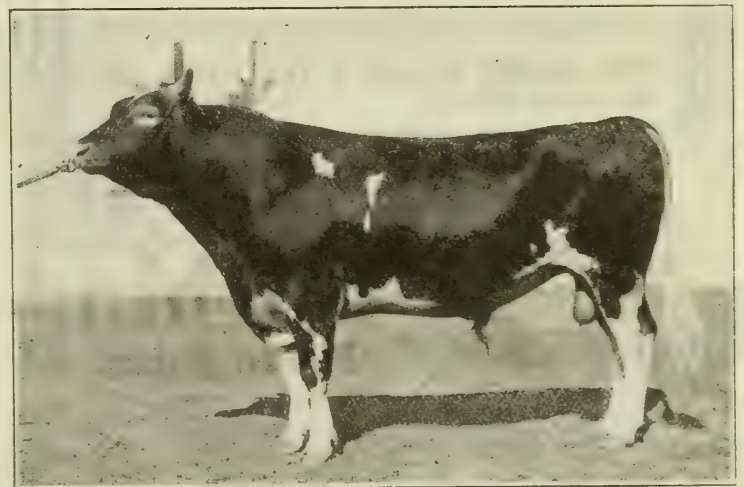
There are many places in the state where the cost of feeding and caring for a steer or beef cow, where pasture is cheap and little labor is required, is figured at \$20 per year or less as against a cost of \$75 or more per year in many places in the East. This certainly constitutes a great advantage to our growers.

The show management and the breed associations are to be congratulated on their choice of judges. The ratings were made by men who thoroughly understand the best ideals of the various breeds and the ribbons went to those animals considered by the judges most worthy to receive them, regardless of ownership.

There was praise from all quarters for Chief of Live Stock D. O. Lively and his assistants for all of the things that go to make a successful show, and this includes everything from the arrangement and architecture of the buildings and judging ring to the courteous treatment of exhibitors and spectators.

Preparations were complete for a world's fair show the like of which was never before assembled—the unforeseen and unfortunate foot and mouth disease situation alone prevented it.

There was much good weather for the show and visitors marvelled at the beauty of the buildings and the setting. There are few if any places on earth where it could be equalled.



Champion Guernsey Bull Owned By W. H. Dupee, Santee

well looked after by Secretary Frank Harding. He was very much pleased with the show but states that had it not been for the quarantine one of the largest and best shows of the breed ever made would have been here.

As has been stated frequently before, there is a great field in California for Shorthorns, and we should see a big increase in the number bred in the next decade.

The Herefords

There was very little competition

California farmers. Capt. T. E. Robson of Canada, the Shorthorn judge and an eminent authority, stated that they were good enough to win at any show in the world.

Red Polled Cattle

Two excellent herds of Red Polls competed for the prizes.

Brown Swiss

One herd, that of B. P. Inman, Junction City, Oregon, won all of the prizes given for the breed. There are a good

Continued on Page 424

More HOP Profits More Bales per Acre



Hop Growers who have taken advantage of our free service department have found it profitable. They have made money through our advice. We have shown them how to increase the number of bales per acre. What we have done for others we will do for you. Write us fully and frankly. Let us know the exact conditions you are working under. Send a sample of soil and we will tell you how we can help you. You will not be obligated in any way. We want every Hop Grower to know all about



Gaviota Fertilizer

How it increases land values while increasing the land's yield. We want to send you positive proof of the wonderful increases it has made. How it feeds the crops and improves their quality.

Read what Hop Men Say:

From a Grower in Sonoma County:—"After using HOP Brand for two years, I am thoroughly well satisfied with results both in production and quality."

Another Sonoma Hop Grower:—"I began using your HOP Fertilizer in 1911 and increased my yield from 180 bales to 378 bales."

From Sacramento County:—"I purchased HOP Fertilizer last year and have had splendid results."

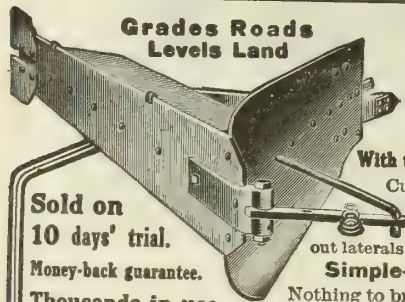
Still Another From Sonoma County Says:—"HOP increased my crop from 8.36 bales per acre to 13.14 bales."

We will furnish the names of these men on application.

"The Care and Feeding of Crops"

is a little book that tells you in plain English some valuable truths about the correct way to put back into the soil those elements which the crops take out. It tells you how to increase the size of your crops and how to make your land more productive. Write today for a copy free.

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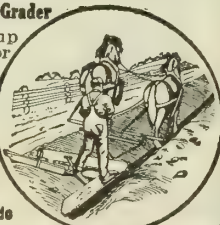
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Cuts V-shaped ditch up to 4 ft. deep. Fine for levee work; terracing; cleaning out laterals and bed furrowing.

Simple—Practical

Nothing to break or get out of fix. Weighs 500 lbs. Does all, and more than the big machines. Pays for itself in a few hours' use. Write for catalog and special introductory proposition.

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Deciduous Fruits

PRUNING THE WALNUT

Written for the California Cultivator
By Sacramento Valley Contributor



ANY people believe that there is something very mysterious about the English walnut and that it cannot be handled and pruned and cared for as other trees are. Some believe that if the tap root is cut the tree will be no good and that if the top is pruned like that of other trees great injury will be done. That both of these ideas are wrong is proven by thousands of good trees grafted in the nursery and pruned like other trees as they grow in the orchard.

There are some general laws of nature that apply to nearly all trees. If a bud or graft of the variety of fruit desired to be propagated is placed in a root stock with which it will make a good union, and the conditions are right, it will make a satisfactory growth in the nursery row whether it is English walnut on black or hybrid root, prune on myrobalan or peach or other root, peach on peach root, or any of the other many satisfactory combinations.

And when these young trees are dug from the nursery some of the roots must necessarily be cut off. Nevertheless they will grow, if soil, moisture and cultural conditions are right and the young trees are properly handled.

The same general principles must be observed in pruning the walnut tree as in any other. During the first few years of its growth it should be so trained as to make a strong frame work for a superstructure of bearing wood. And this cannot be accomplished by letting long "leaders" grow without pruning. In this case the load of fruit must be sustained at the end of long limbs and that brings pressure on the crotch, where it joins the tree like a long lever. The same thing is true of the unpruned prune tree.

This fact about the pruning of the walnut was brought out emphatically at the Nurserymen's Convention in San Francisco by Geo. C. Roeding of Fresno and many other authorities. It was stated that because some of our newer plantings in California are being properly handled they will undoubtedly become the best in the world, for many old plantings in this state and in Europe have not been properly pruned—to their detriment at the present time.

WESTERN WALNUT ASSOCIATION

The secretary of the Western Walnut Association is sending out announcement of the first annual convention of that body which is to be held at Portland, Oregon, November 3 and 4.

"The Western Walnut Association is organized to supply the demand for information relating to the walnut industry in the Pacific and Western states, how best to plant, grow and market this king of all nuts. The importation of walnuts has increased for the last 15 years from 11,000,000,000 pounds in 1902 to nearly 40,000,000 pounds in 1914. The price as well as the consumption is increasing, and

every effort should be made to increase home production by right methods."

The officers of the new association are: President, J. C. Cooper, McMinnville, Oregon; vice president, Dr. C. H. Chapman, Woodland, Washington; vice president, A. A. Quarnberg, Vancouver, Washington; vice president, F. A. Wiggins, Toppenish, Washington; vice president, Walter F. Burrell, Lewiston, Idaho; vice president, Ferd Groner, Hillsboro, Oregon; vice president, M. McDonald, Orenco, Oregon; secretary-treasurer, H. V. Meade, Orenco, Oregon.

The program as announced is: The Walnut Industry, Prof. C. I. Lewis, Oregon Agricultural College; Planting, W. W. Reburn; Cultivation, Ferd Groner; Varieties, A. A. Quarnberg; Nut Foods and Nut Distribution, Dr. W. C. Deming; Harvesting and Marketing, T. A. Harper; Irrigating Walnuts, F. A. Wiggins.

MARKETING OUR PEACHES

The peach crop of the country will amount this year, it is estimated, to more than 58,000,000 bushels. With the application of more scientific methods the crop has increased greatly in recent years and the peach grower is now confronted with problems of marketing rather than of production. Owing to their perishable nature peaches are unusually difficult to dispose of without loss, and good distribution is essential to prevent the glutting of some markets while scarcity and high prices prevail elsewhere.

In order to facilitate proper distribution the United States department of agriculture has just published the results of a study of the movement of the peach crop in 1914. Georgia it is found ships practically double the amount of any other state, 4803 carloads coming from there in 1914. California, Washington, Ohio, Michigan and Colorado follow with shipments of between two and three thousand cars. The other states bring the total to thirty thousand carloads.

In handling this vast crop there is no uniformity in packing or grading. A change in this respect would it is said result in a higher level of prices for high-grade fruit can almost always be disposed of. Another recommendation is that dealers in the smaller towns cooperate in buying peaches by the carload and in pushing their sale.

YUCAIPA'S APPLE SHOW

On November 4, 5, 6 the fourth apple show will be held at Yucaipa. This promises to excel anything of a similar nature ever held in Southern California. Yucaipa and Oak Glen now have a planted area of over 5000 acres. Most of this is set to apples but there are several hundred acres of pears, cherries and peaches. All of these fruits will be on exhibition. As only the finest specimens will be shown, it will pay any one interested in deciduous fruit growing to visit Yucaipa during fair week. Here will be shown an industry of which Southern California may well be proud.

The management promises ample entertainment in the way of refreshments, sports, side shows and all that goes to make an apple fair.

HEMET-SAN JACINTO VALLEY GROWERS' ASSOCIATION

Written for California Cultivator
By Jay Dutter

On Saturday evening, October 16, the fruit growers of this valley met and adopted by-laws and elected board of directors; and are now incorporated under the laws of California. The name of the association is the Hemet-San Jacinto Valley Growers' Association.

The board of directors is composed of some of the most representative men of the valley, all experienced business men, who are sure to conduct the affairs of the association successfully. They are D. W. Amos, president; John Hodges, vice president; Edward Schmidt, secretary-treasurer. The executive committee is composed of Messrs. Amos, Schmidt and M. B. Rideout; the other members of the board are Dr. J. R. Wilson, Dr. J. S. Thompson, Walter C. Carr, W. J. Ferrell, John Nelson, John Bair and Burdette Raynor.

The board immediately took steps toward arranging for the handling of the olive crop, for which fortunately the central association has a market waiting, the whole success of the co-operative movement depending upon the distributing system which the growers have undertaken to try to correct.

In the present system there is an enormous waste of money in handling the produce from the producer to the consumer; this year the one-tenth or so of the peach crop which was saved sold at a price ranging around eight dollars per ton; the price to the consumer ranges from \$200 to \$300 per ton; the jobber disclaims any undue profit, as does the retailer; the freight charge is fixed, as is usually the canner's profit, but there should be less handling by freight—in many cases one haul could be eliminated.

In this maze of handling and frantic denials of profit it is hard to lay the blame on any one in particular, but there is one way that the matter may be settled to the entire satisfaction of all concerned (except the middle men), that way is for the growers to organize into cooperative associations, join together in cooperative selling associations, and sell the produce themselves. Then they may know who has the profit, and in this manner the price may be reduced to the consumer so that an outlet for the entire crop may be had, where it would otherwise some years have to rot on the ground as it has this year.

With a proper system of handling by the producer canned fruit can be sold to the consumer at from 40 per cent to 50 per cent less than at present prices and still net the grower from \$25 to \$40 per ton for peaches and apricots, and sell all of them, where under the present conditions he often loses much of his crop and often receives so little for it that he is minded to dig up his trees.

But if the growers will awaken to the fact that organization is their salvation, by staying with this idea and following to completion, he need not lay awake nights all during the spring wondering if he will be able to sell his fruit. There are millions of people waiting to buy fruit if it can be had at a price which they can afford, and the man that grows the fruit is the man that can make that price and no other; if left to the jobber or retailer to dictate, it never will sell. The grower must be the canner, the jobber and make the price, and the only way to

accomplish this is to organize and all come into one selling organization.

That is the work now being successfully accomplished. The work of organization has been largely completed in Hemet under the direction of Vernon Campbell, manager of the California Growers' Association and by Jay Dutter, who is acting as organizer for the association. The work has been accomplished successfully under the most adverse conditions, the growers having had such a disastrous year that money is very hard to raise for necessities, let alone for financing a cannery association, but the growers have come to the realization that this is the only hope and the only insurance against further possible disaster.

Some of the best financiers and the department of agriculture are encouraging the movement. When this is accomplished and a just system of rural credits established so that the farmer may have 20 or 30 years in which to pay for his farm, instead of being compelled to pay seven to eight per cent

interest and on top of that raise the price to pay for his place in from four to seven years, and that on a promoter's or speculative price, we may at last see prosperity and hope in sight.

Let us tighten our belts, join hands and go forward to success.

WALNUTS IN FRANCE

A recent personal inspection of some of the best growing grounds in the Isere Valley indicates, writes United States Vice Consul Murton at Grenoble, France, that the production this year of walnuts of all grades will be unusually large and fine in this region. The trees, even at this advanced season, are still well in leaf, green, and healthy looking, and for the most part covered with nuts. In only a few places were signs of blight, or, rather, of decay, observable. The percentage of drop-offs is remarkably small this year. The fruit maturing is large, sound, and meaty, well developed, and fairly regular in size. It is clean and

comparatively free from spots. The proportion of diseased or wormy, shriveled, and imperfectly developed nuts appears to be small. The outlook is most encouraging.

Ripening is progressing normally, favored by fine, dry weather, warmth and sunshine, without too great heat or too much rain. That these crops will prove to be considerably above the average is the opinion of everyone competent to judge. They are already practically assured.

Secretary John Hall of Rochester, New York, is mailing to members the proceedings of the meeting of the American Association of Nurserymen which was held at Detroit in June. The book contains reports of officers and committees and also addresses and discussions during the convention. The 1916 convention will be held at Milwaukee, Wisconsin.

The Kittitas Valley Harvest Festival had an attendance of over 5000.

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Sizes 30x3½ and 30x3

We are this year giving special attention to users of small-size tires. There are about a million of them. And the tire we build would win them all if all of them could know about it.

\$317,000 Added

This year we are building these tires larger than ever. We've increased the air capacity by 20 per cent. Added size means added mileage, as every user knows.

We have added 30 per cent to the rubber in the side walls just above the bead. That's where constant bending taxes tire walls most. And where thin-walled tires often chafe and break.

We have made new molds to improve the tire's design. For we have found a new shape which increases endurance.

These three additions will add to our tire cost \$317,000 this year. Yet this year we made another big price reduction—our third in two years, totaling 45 per cent.

Four-Ply Tires

Even the smallest Goodyear Automobile Tires

**20% More Capacity
30% More Strength**
In Side Walls

are four-ply tires—even size 30x3. And our anti-skid tread—the Goodyear All-Weather—is double-thick on all.

So Goodyears have always been exceptional tires. They won on sheer merit the top place in Tiredom, and for years have outsold any other.

Now we add 20 per cent to the air capacity and 30 per cent to the rubber above the bead. And we give you a better design. We are building by far the most capable tires ever built in these small sizes.

So even the occasional mishap and misuse will find new strength to combat them.

Get These Extras

The value we give in Goodyear tires is due to our mammoth output. Get that value—it is due you. Smaller, thinner, lighter tires can't serve as Goodyears do. Even last year's Goodyears, though the leading tires, could not compare with these.

Any Goodyear dealer will supply you. Every neighborhood has a Goodyear Service Station with your size in stock, and it renders full Goodyear Service.

(2648)

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grown by experts in an ideal location where soil and water conditions are right. Our citrus and olive trees are two-year-old budded stock, strong and vigorous,—symmetrical of root, body and top. The selection of buds is true to the best type of the varieties to which they belong.

We have the Navel and Valencia Orange, Eureka Lemon, Mission and Manzanillo Olive trees.

Contract with us now and your money will go twice as far. We can give you low figures because we raised our own stock at a small cost. Each tree will be carefully balled and all shipments will be under the direct supervision of a man who knows how. We want your business. A postal will bring our special representative to you. His practical experience will be of value to you in buying and planting.

Get after this proposition right now while the matter is fresh in your mind. In writing, state about how many trees you will need.

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Own your own High Pressure Spray Rig and be in a position to SPRAY WHEN YOU SHOULD. The right time to spray is at period of incubation or hatching of Tree Pests, don't compel yourself to rely on hired spraying or fumigation.

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AVOCADO GROWERS' MEETING

Written for California Cultivator



MOST enthusiastic bunch of avocado growers last Saturday filled the assembly room of the Hotel Alexandria at Los Angeles at a meeting of the California Ahuacate Growers' Association, presided over by Pres. E. G. Hart. A very attractive exhibit of fruits and trees proved so interesting that visitors stood five deep in front of them and the newcomer was forced to wait his turn and edge into the crowd before he could admire the rich looking fruit displayed. The varieties were plainly placarded and the many questions asked of the exhibitors showed the keen interest in avocados in general and the most promising new varieties in particular. The state university also displayed an exhibit of by-products, avocado oils, avocado flour, candied avocado seeds, etc.

Prof. I. J. Condit of the University of California gave news items on various phases of avocado growing in California, touching on the bearing trees scattered through the northern and central parts of the state. He said:

"One fact has been clearly demonstrated by some of these plantings, namely that water must be withheld in the fall and the trees properly hardened before the cold weather sets in, otherwise the tender growth will be cut back. It is this fact which renders it difficult to gather data on the frost resistance and hardiness of any tree but especially of evergreen fruit trees which have several periods of growth during the season. The hardiness depends to a large extent upon the degree of dormancy of the new growth."

The speaker described the work of the state experiment station in identifying insects and fungus pests affecting the trees and gave an interesting account of experiments which have been carried on in processing of various byproducts of the avocado, flour and paste, for flavoring soups, etc., and a confection made by candying the seed in syrup.

Score Card for Avocados

A tentative score card was distributed to the audience by Prof. Condit which will prove of interest to all growers. This will be published in a later issue.

Food Value of the Avocado

"Food Value of the Avocado" as presented by Prof. M. E. Jaffa of the state university, apparently justified the most enthusiastic avocado growers in their claims as to its desirability, not only as a salad and dessert fruit but as a food. Prof. Jaffa said that not only was the total food value of the avocado high, as shown by its analysis, but its dietetic value was exceptionally high. "The only fruit comparable with the avocado in value of its fat is the olive but the avocado ranks higher in this respect than the average olive. The latter fruit also has the disadvantage of requiring special treatment before it is ready for consumption and should really rank as a processed fruit rather than as a fresh one."

The Avocado in Florida and the West Indies

Mr. Wilson Popence, agricultural explorer of the United States department, gave a most interesting talk on the avocado industry in the West Indies and Florida. As to the Cuban industry he said:

"I believe it can truthfully be said that the avocado tree which receives systematic care in Cuba is very rare.

Most of the trees receive no cultivation whatever, but the soil is excellent, and they seem to thrive. Propagation is by seed, but in recent years the government and some of the most progressive horticulturists of the island have taken up budding with fairly good results.

"The fruits which go to market are picked usually before they are fully ripe, and when they reach Habana they are still hard. They are packed in sacks, boxes, or often hauled into town in a cart without any packing whatever. I have stood in the Tacon market at Habana and seen these fruits which were brought in from the country sorted into piles of different sizes, and then thrown from the ground into nearby wooden bins, a procedure which would certainly have been disastrous to fruits commencing to ripen, and which can scarcely be recommended under any circumstances. For export, the Cubans pack the fruits in empty kerosene boxes, orange crates or barrels, using no wrapping paper or packing material of any kind. The method is rather crude, and one hears a good many reports of Cuban fruit reaching New York in poor condition. In some cases, however, the loss is due more to other conditions than to careless packing, such as picking over-ripe and allowing it to heat in transit.

"There are a few good groves of Trapp avocados in the island, and also in the Isle of Pines. These have been planted by Americans, and have only recently come into bearing. They have demonstrated that the fruit will not hang on the trees so long in Cuba as it does in Florida, and also that the trees will make much more rapid growth. Failure to remain on the tree until late in the fall is something of a drawback, inasmuch as the highest prices are obtained in late fall and winter. The Guatemalan avocado may solve the problem, however. It is much earlier in Florida than it is in California.

"In most of the Florida groves the trees are planted about 24 by 24 feet. Sometimes this distance is decreased to 20 feet, so that the trees will shade the ground sooner; sometimes it is increased to 26 feet, so as to allow more room for ultimate development. They undoubtedly require more room on heavy soils than on light, and for this reason it will doubtless be necessary to plant at greater distances here in California. Experience has shown that the young trees should be kept heavily mulched; weeds, grass, palm leaves and seaweed are used for this purpose. During the winter season the mulch is sometimes removed, and the surface given very shallow cultivation; on the approach of summer the mulch is replaced, and cowpeas or velvet beans are often planted between the rows. A mulch should be kept around the tree until it is at least three or four years old, when the shade of its foliage and the accumulation of fallen leaves upon the ground may serve as sufficient protection from the sun.

"There is no established practice in regard to fertilizing avocados, each grower having his own ideas on the subject."

As to returns from Florida groves Mr. Popence said that \$5.25 per crate was a good average price the season through. A good grove of five-year-old trees should produce between four and five crates. Fruit shipped in October brings a lower price, often not more than two dollars per crate. The best prices are secured after Christmas. Some fruits marketed this year in early February brought \$36 per crate, so the aim of the Florida grower is to secure a variety that will fruit late. Most of the present Florida production goes to Washington, Philadelphia, New York and Boston, but a very good demand is now being built up in the Middle Western states. The only varieties commercially grown are the Trapp and Pollock. Probably 90 per cent of the total output is of

Trapps. This is a thick skinned, round green fruit which averages a pound to a fruit. It has proven an excellent shipper.

The standard package in Florida is the tomato crate 12 by 12 by 24 inches. Growers have largely discontinued the use of tissue paper wraps as the fruit heats more quickly in these wrappers. The fruit is now usually shipped in layers with excelsior between as a cushion.

At the close of his talk Mr. Popenoe was subjected to a rapid fire questioning from all parts of the hall which brought out further most interesting points on the avocado industry.

Station Work for the Avocado

Dr. H. J. Webber, director of the citrus experiment station at Riverside, impressed the necessity of finding proper regions of the state for avocado culture, suitable varieties and root stocks. He urged importing and testing out of every promising variety that could be found in Mexico, Central and South America and promised the aid of the experiment station in research work along these lines. He suggested the desirability of holding an exhibition of seedlings each year, awarding a medal to the best, in this way stimulating selection and breeding up of best varieties. In closing he urged great care to avoid introducing pests and diseases of the avocado, especially strict observance of quarantine regulations.

Things to Be Expected

Mr. C. P. Taft of Orange read a paper on "Things to Be Expected," predicting a prosperous future for the avocado industry and the avocado grower.

Marketing

Mr. J. C. Bosche, who has had some experience in marketing avocados from Mexico, said that he found a better demand for the fruit in San Francisco and Los Angeles in proportion to population than in any other cities of the United States, with the possible exception of New Orleans and San Antonio. He also impressed the undesirability of paper wrapping.

E. B. Rivers, wholesale commission merchant, spoke of the increasing demand for the fruit. He said: "We have orders coming to us from Arizona every week and it will only be a matter of a couple of years when this fruit gets down to a reasonable price that there will certainly be a big demand for it. Last winter we handled a good many fruits, getting \$12 a dozen for them." Mr. Rivers emphasized the point that one of the best ways of popularizing the fruit would be to make known the proper ways of serving it. Much good fruit is served in unpalatable mixtures which naturally prejudices the man who is tasting it for the first time.

The general discussion which followed the addresses was conducted by Dr. J. Eliot Coit of the state university.

Resolutions were passed by the meeting that the spelling a-v-o-c-a-d-o be used in referring to the fruit, also that the secretary of agriculture be asked to send a special agricultural explorer to Central America, Mexico and South America to look for cold-resistant varieties.

The big hit of the day was made by the salad, sandwiches and desserts all made of avocados, which were served at the noon intermission. The association distributed leaflets of recipes giving a dozen or more delicious ways of serving avocados and these we will give to our readers in a later issue.

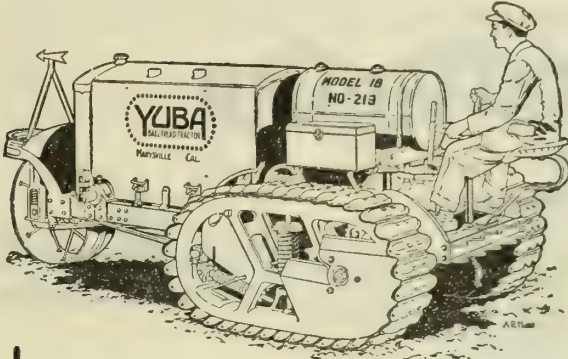
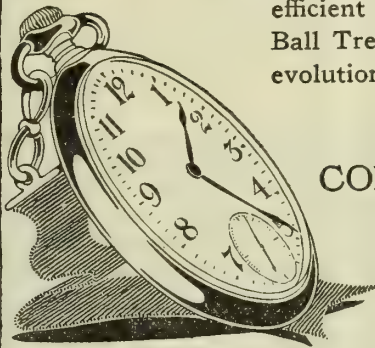
Buying a Tractor

Did you ever stop to think that the development of the tractor has paralleled the development of the timepiece?

First came the sun-dial. It was cheap, but useless in rainy weather.

Then came the hour-glass. It needed constant attention to give results.

The alarm-clock was another step. It is big and cumbersome, lasts only a short time, and translates power into noise.



Now!

If you really wanted a first-class timekeeper you would buy an eighteen-jewel watch, compact and reliable. This is the kind of tractor the Yuba is. With eighteen sets of Hyatt roller bearings instead of eighteen jewels — compact, reliable, efficient and economical, the Yuba Ball Tread is the latest step in the evolution of the tractor.

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433 California Street,
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Gentlemen:
Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name

P. O. Box

Town

State

Size of Farm acres.

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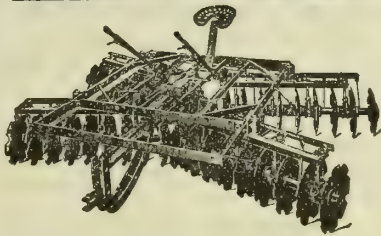
Fruit Rice

Grapes Alfalfa

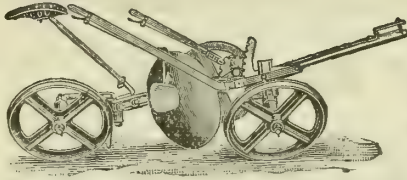
Grain Hops

Hay

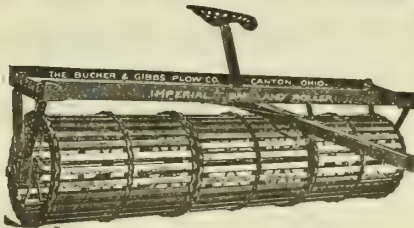
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Little Stories of Success

No. 9

Mr. Fred Rollins of Chico, who bought a Caterpillar "60" in March, 1914—and incidentally cleaned up \$1700 the first month he owned it, plowing night and day for his neighbors—dropped in the other day to tell us his story of success.

Much of Mr. Rollins' work with the Caterpillar has been stationary work, and for this he says the Caterpillar has them all beat. In the rice fields, where a separator sinks in mud up to the sills, Mr. Rollins can go with the Caterpillar, and be ready to run right away without stopping to build up any foundation or blocking for the tractor. He threshed a rice crop for one neighbor, where a short time before when this same crop was harvested, the binders had to be pulled through the fields on sleds.

Mr. Rollins is convinced that the right motto in buying a tractor is "Quality First." What's your problem? Write us.

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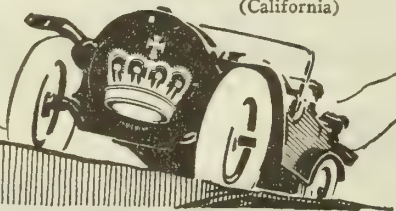
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Bees

and



Their Care

GIVE THE BEE A BOOST



HAVE the bees lost their old habit of industry, which for generations has proved such a convenient example to lay before the young and has served as a ready-made advertising idea for savings banks? A perusal of statistics collected by the government leads us to believe that either the bee is not so efficient as he was in the old days or his keeper has not been keeping up with the procession. The national appetite for honey seems to be normal, and the bee seems to be hunting the first blossoms with unabated energy, so the solution of the more-honey problem must lie with the bee farmer.

No doubt such diseases as foul brood have had a great deal to do with reducing returns from the hive. The industry has looked so small—even though the annual production of honey and wax is worth about \$6,000,000—that the tendency has been to neglect it. Not long ago some of the newspapers were moved to abortive attempts at humor because a member of the Pennsylvania legislature introduced a bill providing for the expenditure of \$50,000 for the investigation of bee diseases. An occasional appropriation of this size is not extravagant when we consider that the bee business in Pennsylvania returns more than a quarter of a million dollars a year. Production is on the down grade, but why should it be allowed to slide to the bottom?

Nothing else produced on the farm includes such a high percentage of sunshine and fresh air, and those commodities are not expensive. Honey is a by-product of farm crops that are grown for other purposes. Therefore honey is almost pure velvet. With the increase in the production of alfalfa and sweet clover there should be an increasing field of operation for the bee. Other states besides those on the Pacific Coast, where the business is growing, should be pushing the industry. Attempts to provide substantial assistance deserve more attention than mere humorous comment.—Country Gentleman.

VALUE OF COLONY OF BEES

Regarding the value of a colony of bees Mr. Mendleson of Ventura writes:

"This would depend on the general condition of the colony. If the colony is Italianized and the hives are in good condition and well painted, and the brood frames and combs in best condition they are worth five dollars per single story colony, but if the hives and combs are poor, etc., they are only worth what one can get for them."

As to production per hive and prices Mr. Mendleson adds:

"That depends on the location, the condition of the colony of bees, and the keeper. If in prime condition, in a good honey flow, we consider an average of 200 pounds per colony good, but we have an occasional year when the production runs up to 300 or 400 pounds or more per colony. However, these heavy flows are few and far between. I was told by the late Mr. R. Wilkin that he averaged in good,

bad and indifferent years about 55 to 56 pounds per colony, but in the sage ranges in the past ten to 15 years the average has been much less. In the three years, 1898, 1899 and 1900, we never got a pound of surplus. In the alfalfa ranges the averages are much higher.

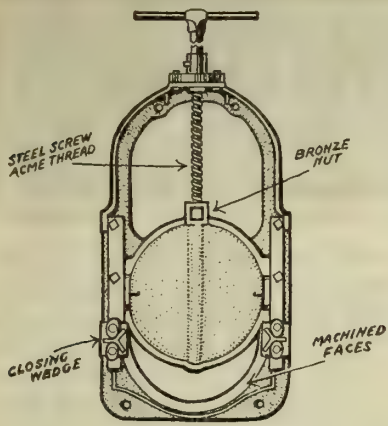
"The average price, like value of hive and production, also depends on quality. Previous to July or August, 1914, average prices for white honey have ranged from five to eight cents. Some have sold as low as four cents. Low prices are generally the result of lack of organization and ignorance as to general crop conditions. If the honey producers were as well organized as are the buyers we would undoubtedly receive better compensation for our labors. Serious loss of bees from disease has also helped to eliminate or reduce profits. In many cases whole apiaries have been wiped out and yet prices have been forced down regardless of the small number of colonies remaining. Heretofore honey prices have kept pace with prices of sugar but organization of buyers has resulted in conditions which are just the reverse.

DESTROYING WASPS

The wasps known as hornets and yellow jackets do considerable harm to ripening fruit by eating through the skin in order to suck out the fruit juices. Much of this harm is attributed to bees but in almost all cases when bees are feeding on the exuding juices they are frequenting holes made by other insects. Again, in camp the pleasures of an outdoor meal is often spoiled by these same wasps pouncing down on the food spread out and carrying it away bodily. The wasps pay little attention to people when hungry and will dart down, buzzing about in a most annoying way. At such times it is ill advised to strike the wasps and it is far better to let them have their way, for an enraged wasp will pursue its tormentor for some time.

Dr. A. L. Melander, entomologist of the Washington experiment station, gives the following simple method of destroying wasps:

These wasps nest in the ground or in old trees. If the nest can be discovered, which usually means watching the insects when they fly home, the entire colony can be quickly exterminated. A gallon jug, quarter-filled with water and placed next to the nest, is all that is needed. A wasp will emerge from the nest opening, perceive the jug, and fly angrily at it. The hollow sound of its buzzing, echoing from the jug will make it enter, when it falls into the water. Wasps are able to communicate with each other and the imprisoned wasp possibly calls to its sisters. At any rate the colony, one by one, in the course of the day, will find its way into the jug. This system is perhaps easier than the distribution of poison on food for the wasps. If the latter method should be tried a little Paris green or white arsenic may be distributed on minced meat and scattered where the wasps will find it.



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The Lawn and Flower Garden

THIS MONTH

Written for California Cultivator

NOVEMBER is bulb planting month. Nearly all the spring bloomers should be planted. Daffodils, hyacinths, tulips, iris—while the latter is not strictly a bulb for practical purposes it is usually so classified—and many others should be planted. If iris has been standing several years better results will be secured by breaking up the clump and resetting. Plant tulips six or more inches deep unless the soil is very heavy, in which case five inches will answer. A mulch should be maintained over the surface so that it will not harden and prevent the young shoots from coming through. Amaryllis which bloomed a few weeks ago may now be divided. It must be remembered, however, that in dividing these clumps there will be a loss of some flowers the first season, but where they have been several years in one cluster the young bulbs push out of the ground the old ones so that sub-division is necessary. However, this does not occur with bulbs under three or four years of age.

Annuals may be planted not only in May but, as in the case of our native California poppies, also this month. We say they "should" with emphasis for nothing is handsomer, and it now appears that California will be visited by many thousands of tourists another year as well as during this—exposition year. San Diego is taking steps to continue her exposition through another winter and funds have been subscribed to that end which almost assure it. Europe will be in no position to receive visitors, even if the war stops at once, therefore California

must be in a position to entertain. Make our state beautiful by scattering poppy seed everywhere. There are many others of our native annuals. Most of the seedmen have mixtures of these seeds. It is best to make a bed and give the seed a good chance for the first few weeks, with water if possible. If this cannot be done scatter the seed and let nature do her best.

Plant abundantly centaurias, pansies, stocks, calendulas, calliopsis, candy-tuft, gaillardias, mignonette and others of the old time favorites. Most of these will come into bloom in about four months, some of them sooner. Another plant which is very satisfactory is scarlet flax.

Clean up the old golden glow, golden-rod, Shasta daisies, or beds of other perennials which have finished blooming. If the ground is needed for other ornamentals these plants may be heeled in and an abundance of water turned on them. In January and February they will send out a mass of young growth which may be broken off and new plantings started. This is the best way to secure thriftiest plants.

Give the lawn a thorough raking, with application of fertilizer. If there is Bermuda grass in it—as there is reasonably sure to be—a good application of fertilizer will green up the blue grass which will keep green through the winter. If its growth is not checked more or less the Bermuda, which grows but little through the winter, will soon turn brown and the lawn will look most unsightly. If nitrate of soda is used the best means of application is to dissolve and apply through the sprinkler.

Small Fruits

Vegetables

THIS MONTH

Written for California Cultivator

MANY a fine meal can be had from the winter garden. Of course one must use care in choosing the seed for most sections in California, but the hardier plants will grow continuously from now until spring.

In Sacramento and San Joaquin Valleys

If onion seed were planted during September and October, November is a good month in which to reset the young plants, either for the home garden or for field culture. These are probably nearly as large as a lead pencil, which is the best size for transplanting. One point in onion culture is thorough tilth. Before the seeding is attempted have perfect seed bed preparation. There should not be a clod in sight and the soil should be moist clear up to the surface. If horse cultivation is to be followed set rows two and a half or possibly three feet apart. Before taking up the young plants from the original seed bed irrigate heavily. This fills the plant with moisture and besides puts the ground in better condition for removing the young plants without tearing the roots unnecessarily. Do not pull plants without first loosening the soil with shovel or spade point.

Where one wishes to grow onions direct from seed for later market he may sow during the last of November or even into December in well prepared seed bed or field.

Garden peas may still be planted.

Sow in drills, though some prefer to sow in hills two or three feet apart. The latter method gives better opportunity for picking. The favorites are Stratagem, Telephone and Premium Gem.

In addition there may be planted cabbage, turnips, lettuce, radishes and all the hardier vegetables.

Southern California

Beets, carrots, Brussels sprouts, endive, cabbage, cauliflower, lettuce, leeks, onions, turnips, parsley, peas and spinach may be planted in almost every district of the southern end of the state.

Those who wish to grow very early peppers or tomatoes may now plant them in hotbed or at least in cold frame, but great care must be exercised to keep these growing during the cooler months. Of course, this early planting is only justifiable in sections which are comparatively free from frost. Peppers planted now, if well cared for, would make large stalky plants to put into the garden in February. It is possible to plant the chayote this early. However, for early planting it is usually placed in pots, lying on the side with the fruit not more than half covered, the blossom end slightly higher than the stem end. Put the pots in a warm place and keep only moderately moist for it is not desired to put them in the open ground too early, and besides if too much water is applied the entire seed may decay.

This is a good month in which to plant garlic, which is very exacting as to soil. It will not do well in heavy, moist land, light, loamy or sandy soil being required.



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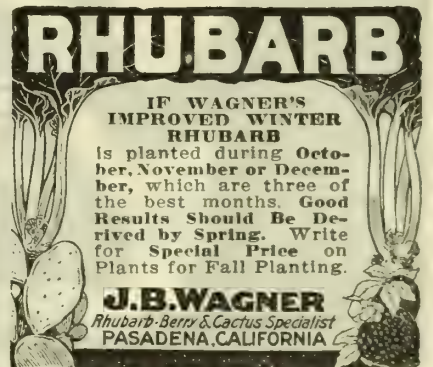
ing. The berry is very large and sweet. Oblong, no core, very small seeds, solid, fruits spring, summer and fall, grand canner, dessert, jam and jellies. Crops between 15,000 to 20,000 quarts to the acre. Send for circular and color plate, and how to grow it. One-year-old plants 3 for 50c, 6 for \$1.00, 12 for \$2.00, 25 for \$4.00, 50 for \$7.50, 100 for \$12.00. Prepaid to your city. Order now. Berrydale Gardens, lock box 685, San Jose, Calif.

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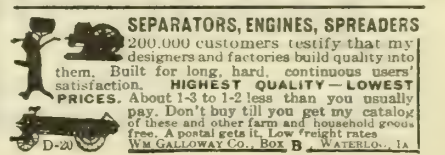
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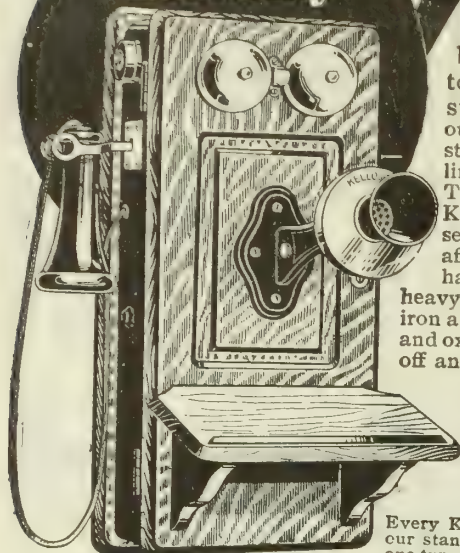
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General Agriculture



THE FEEDING POWER OF PLANTS

Written for the California Cultivator
By Gordon Surr

HAPPY is he who knows the causes of things, says Virgil, and in many cases such knowledge may bring profit as well as pleasure. In the publication, "Science," of April 23rd, 1915, Mr. E. Truog advances a new theory on the feeding power of plants, dealing particularly with raw rock phosphate. Mr. Truog remarks that "with the rapidly increasing use of phosphate fertilizers, the subject has become one of considerable economic importance, since it may be possible that with a proper selection and sequence of crops as regards their feeding power, the cheap insoluble phosphate fertilizers may be used with greater advantage." Mr. Truog is a member of the staff of the department of soils of the Wisconsin experiment station and has made numerous experiments upon the availability of various phosphates, which were referred to in the Cultivator of June 17th, 1915. The feeding power of plants is not only of scientific but also of eminently practical interest and the same is true of many other subjects, popularly supposed to belong wholly to the realm of the "high brow."

The following is a review, or possibly I should say attempted review, of Mr. Truog's interesting article in "Science," the quoted matter having been taken bodily from the article.

It seems that the roots of practically all plants give off large quantities of carbonic acid and normally, at the most, only traces of other acids. Some have suggested that the amount of carbonic acid yielded may account for differences in feeding powers, which view, however, receives little support from experiments. In any event, carbonic acid is without doubt of great importance in rendering plant food available, and through its agency, for example, raw rock phosphate is converted into dicalcium phosphate and calcium bicarbonate. Dicalcium phosphate is the so-called "reverted" or "citrate-soluble" phosphate and, together with the water-soluble form, is styled "available" in fertilizer analysis. This chemical reaction, like many others, is reversible and under some conditions calcium carbonate causes dicalcium phosphate to change to the more insoluble form present in raw rock.

Now chemical action tends to cease unless all the products are removed and, in this case, if the plant takes up all the dicalcium phosphate as fast as it is formed from the rock phosphate, but only absorbs some of the calcium bicarbonate, the reaction gradually comes to a standstill and no more raw rock is dissolved. In other words, equilibrium is reached due to the accumulation of the calcium bicarbonate. Consequently if a plant could not take up all the bicarbonate of lime it would soon run short of soluble phosphate from the raw rock. It, however, both the dicalcium phosphate and calcium bicarbonate are steadily absorbed by the roots as fast as these products are formed, solution of the raw rock phosphate likewise goes

steadily on. Hence it would appear that plants requiring considerable lime would also make good use of rock phosphate. Mr. Truog therefore advances the following hypothesis:

"Plants containing a relatively high calcium oxide content have a relatively high feeding power for the phosphorus in raw rock phosphate. For plants containing a relatively low calcium oxide content the converse of the above is true. A calcium oxide content of less than one per cent may be considered relatively low. Corn, oats, rye, wheat and millet belong in this class. A calcium oxide content of somewhat more than one per cent may be considered relatively high. Peas, clover, alfalfa, buckwheat and most of the species of the cruciferae belong in this class."

Furthermore, Mr. Truog and other investigators have found that the availability of raw rock phosphate is greatly increased by sulphate or nitrate of ammonia, in the case of plants which normally do not get much phosphorus from raw rock. This fact strongly supports the above theory, as calcium bicarbonate is far more soluble in solutions of ammonia compounds than is water alone, owing to which, some of the calcium bicarbonate is kept in solution, which otherwise would prevent further action. Keeping the products of a reaction in solution has the same effect, to some extent, as actually removing them. For example, in using cyanide for fumigating trees, cyanide of sodium, sulphuric acid and water are employed, the products being hydrocyanic acid gas and sodium sulphate. The water serves to keep the sulphate of soda in solution, but for which the liberation of the hydrocyanic acid gas would be incomplete. (The good results following the application of sulphate of ammonia may possibly be due in part, at least in some cases, to phosphorus rendered more available.—G. S.)

It will be seen from what follows that Mr. Truog's theory may have a broader application. He remarks that "with the theory here proposed it is possible to predict from the calcium oxide content of a plant whether or not that plant in quartz cultures will be a strong or weak feeder on raw rock phosphate. Under soil conditions there are many subsidiary factors that influence the availability of phosphates, and hence under such conditions the relative growth of a plant cannot be taken rigidly as a true index of its feeding power for the limiting element which is supplied in an insoluble form. Seeming deviations from the theory may result under such conditions. It is possible that with proper restrictions the theory can be applied to the feeding power of plants in a broader way, involving the use of other insoluble plant-food materials besides rock phosphate, and the general theorem could then be worded as follows: The feeding power of a plant for an insoluble substance depends primarily upon two conditions, viz.: (1) The solubility of that substance in carbonated water and, (2) Whether or not the plant removes from solution all the products of the solubility reaction in the proper proportion, so as to allow the solubility reaction to continue indefinitely."

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HUMBOLDT COUNTY'S PURCHASING AGENT

From B. H. Crocheron, state leader, we have the following:

"Mr. Christiansen, our farm adviser in Humboldt County, has forwarded to me your letter of September 14, asking information about his hopper-dozer and also about the upchasing activities of the farm bureau. Mr. Christiansen is replying direct to you regarding the grasshopper control work and I am glad to say to you as follows concerning the purchasing department of the farm bureau:

"The Humboldt County farm bureau being the first in the state has embarked upon several pioneer activities, one of which is the employment of a purchasing agent to buy certain kinds of materials as direct agent for the members of the bureau. While the office of the state leader and the farm adviser are not advocating such an arrangement they have, nevertheless, given this particular movement all the assistance possible, regarding it in the light of an experiment upon which it is desirable that results shall be colated. The office of the state leader, however, has insistently declared that farmers should not go into a general purchasing business of all their supplies any more than bankers should go into a general business of owning farms. In order to have a substantial community there must be not only prosperous farmers but prosperous storekeepers and bankers, which involves as an ethical necessity that the farmers should stay well within the scope of their proper sphere.

"It would seem, however, that farmers are justified in buying cooperatively and at first hand, those materials which are used in production on their farms, thus—fertilizers, seeds, feeds and the like may be a proper sphere where a cooperative farmers' movement is really looking for the best advancement of the whole community. It is certain, however, that a general storekeeping business to sell flour, sugar, stoves, shoes, etc., is not the proper sphere on which a real farmers' organization should embark.

"The farm bureau of Humboldt County, therefore, has only purchased, and is intending to purchase only, those materials that are used in actual production on the farms. The farm bureau employs a secretary and purchasing agent who is paid a salary, and, at present, a small commission on all purchases. The latter plan, however, is recognized as being unsound, and the intention is, as soon as possible, to transfer this purchasing agent entirely to a salary basis. To date the purchasing department of the Humboldt County farm bureau has purchased something over 1000 tons of alfalfa hay, which is not widely produced in Humboldt County. This has been obtained from other farm bureaus situated in the valley region of the state and distributed through the city of Eureka to such points in Humboldt County as may be desired. It has also purchased something over \$2,000 worth of feed, such as coconut meal, rolled barley, ground barley, middlings, bran, wheat, alfalfa meal, and corn. The purchasing department is also preparing to buy seeds of high grade for its members under a guaranteed test to be checked up by the government laboratory at the university.

"One of the most important activities of the farm bureau has been the quarrying of lime from its own quarry at Howe Creek, near Rio Dell. This lime is gotten out by contract and sold

at the quarry for \$3.85 a ton or \$4.95 f. o. b. at the railroad station. The specifications for this ground limestone are that 10 per cent should go through a 200 mesh screen, 50 per cent through a 150 mesh screen, and all through a 50 mesh screen. While this quarry has only been operating during a short time, it has already gotten out and sold to the farmers 400 tons of ground lime and it is expected that an exceedingly large business will be done when the time of year for applying the lime draws near.

"The farm bureau is gradually, through its purchasing agent, getting into a small marketing business and has for some time been marketing eggs for its members. It is also prepared to handle apples under certain standardization regulations and this will doubtless be undertaken in future.

"While the purchasing experiment of Humboldt County farm bureau has so far been generally satisfactory it has nevertheless disclosed, as was expected, certain difficulties of the situation which require tact and business ability to meet. The office of the state leader, further, is not advocating the establishment of any similar enterprises in other farm bureaus but is everywhere advising the other counties concerned to watch Humboldt's experiment until such time as more data is available."

CONFERENCE ON MARKETING AND FARM CREDITS

The National Council of Farmers' Cooperative Associations has joined

with the general committee of the National Conference on Marketing and Farm Credits in issuing a call for a third conference to be held in Chicago, November 29 to December 2. The purpose of the conference is to frame legislation for submission to congress at its coming session, intended to provide adequate banking accommodations for farmers, to stimulate the movement for standardization of farm products for purposes of distribution, and to promote the organization of agriculture along lines which will develop the business side of this fundamental industry.

SUGAR IN WORLD TRADE

Recent government reports covering the total exports from and imports into all the countries of the world during 1914 show that sugar is third in importance among the eight principal foodstuffs carried in international trade. These eight rank in value as follows:

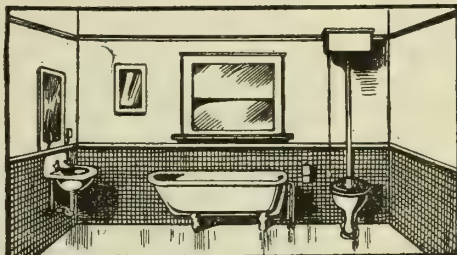
Wheat and flour	\$774,000,000
Coffee	386,000,000
Sugar	382,000,000
Rice	278,000,000
Barley and malt	220,000,000
Corn and meal	210,000,000
Tea	143,000,000
Oats	102,000,000

Of this \$382,000,000 worth of sugar bought and sold in the world's marts during 1914, the bill of the United States for imported sugar amounted to \$118,000,000, or 30 per cent of the total carried in foreign trade. To pay this bill requires exports of 110,696,126 bushels of wheat, or 63 per cent of the whole amount exported.

ARIZONA STATE FAIR

The Arizona state fair will be held at Phoenix, November 15 to 20. During the entire week there will be racing events daily, live stock judging and agricultural displays. An attractive assortment of entertainment has been arranged for in addition to the sporting events. Harness and running races for substantial purses will bring out a number of fast horses from the best stables in the country. A 150-mile automobile race on the mile dirt track for a purse of \$5000 is to be the star feature of Saturday, the 20th. The same day will witness a 100-mile motorcycle race. This year an elaborate number of wild west events have been arranged for, some "bad" horses, well known in the West, are to be ridden in the contests. The famous bull bought by a local dairyman at the Panama-Pacific Exposition sale will be on exhibit. California says it is a shame the animal left the Golden state. San Francisco's famous dog judge will be on hand to decide the merits of the canine contestants. Nine counties of Arizona will send their teachers to attend the institute which will be held in Phoenix during the sessions of the state fair. Trap gun experts will hold a number of important contests during the fair week. An extensive carnival and show combination has been secured for entertainments night and day. Gold medal babies will be selected from the many entered in the better babies contests. There will be unending variety of prizes for all sorts of farm stock and products. The total expenditure to insure the success of the fair has been placed at \$80,000, and Arizona makes a show worth seeing.

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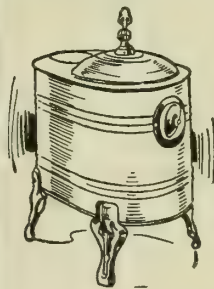


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Long Handle Spades, per dozen \$3.75 or 40c each
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Long Handle Scoops, per dozen \$3.75 or 40c each
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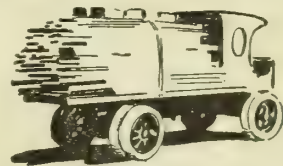
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California CultivatorA Journal of Horticulture and
Agriculture

By

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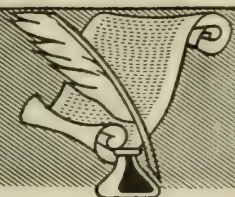
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C. A. Cour, Globe Bldg.,
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geles, California, as Second-Class Matter.**Thursday, Oct. 28, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**THE COVER PHOTOS**A glimpse of the P. P. I. E. In-
ternational live stock show may be
had on this week's cover. One of Cali-
fornia's finest Jersey herds—that of
Guy H. Miller—furnishes gold medal
winners shown in the upper photo,
while the Ayrshire winners of J. W.
Clise, Seattle, Washington, are shown
below.**BOY FARMERS**Prize winning young farmers
are at present on their way East to
see agriculture in more than half the
states of the Union. They have been
contesting during the past year for
this prize. California farming should
be materially improved during the
coming years by this trip which should
broaden and give greater power to
every one of these young men.**PREPARING FOR GREAT YEAR**Manager G. Harold Powell of
the California Fruit Growers' Ex-
change, with Orange Sales Agent Dana
C. King and Traffic Manager A. M.
Mortensen has just returned from a
several weeks' trip to various centers
of divisions which are made of the
United States in the marketing scheme
of the exchange. The centers of these
divisions are: Northwest, Seattle;
North, Minneapolis; Central, Chicago;
Northeast, Boston; Atlantic Coast,
New York, and South, Houston. In
these six divisions there are 77
agencies.Each of the 77 agents came to the
centers to meet Messrs. Powell, King
and Mortensen, also Advertising Man-
ager T. J. Grassley and W. T. Kestner
of the Lord & Thomas Agency for the
purpose of discussing the market situa-
tion and to study methods of enlarg-
ing markets and of inducing greater
consumption of California oranges, or
at least those of the "Sunkist" make.One step to this end was of course
the making known to these agents of
the situation in California, the quality
of its fruits, the standardization or
dependability of the "Sunkist" brand,
and in addition—and the greatest fea-
ture of all this trip—the closer rela-
tionship or the making of the sales
force a more intimate part of the
greatest marketing system in the
world through creating a better esprit
de corps. "Sunkist" is to be made a
household word the United States
over.The exchange will control a greater
percentage of California citrus fruit
than any preceding year.**CHRISTMAS IS COMING**Christmas is coming and the
Cultivator has a hint. It would hardly
be the thing to suggest that our read-
ers shop early; that was worn outThe Cultivator as a Christmas pres-
ent has one strong point in this, that
it gives 52 reminders of the Christmas
thought that prompted its giving.**CHAMBER OF COMMERCE**Chambers of Commerce and
other development or boost organiza-
tions are responsible for the presence
of many of us in California. The cam-
paign of telling of the wonderful ad-
vantages of the land of sunshine and
flowers started more than a half cen-
tury ago and we're still at it and al-
ways will be. We always tell the
truth—we can hardly do more—and
still they come. Some succeed and
like us; some don't. The latter are
peevish and assert that the truth is
not in us. Such we urge to greater
effort and point to the fact that suc-
cess—and liking us—is a matter of
personality.

Other than that meager advice the

HOW SHOES ARE MADE CHEAPERFIGURING cost of the individual pair, a manufacturer can make
1000 pairs of shoes cheaper than he can ten pair.When he has but ten pairs of shoes to make he can't take
advantage of modern machinery—he can't have a very large fac-
tory; he can't employ much help and he certainly has to buy
his material in small quantities.The man who makes 1000 or 10,000 pair of shoes gets every advan-
tage. He can afford to buy the most up-to-date machinery; he can afford
to employ the most skilled artists; he must keep his factory healthy and
clean in accordance with the sanitary laws; he can buy material where
he likes and practically at his own price. In fact, when he is dealing
in such big quantities it is absolutely necessary that he do everything to
reduce the cost of production and keep up quality.It is the ambition of every manufacturer to make large quantities, but
the first principle of business is how to sell. He doesn't want the stock
unless he has the means of disposing of it, and this is just where adver-
tising comes in.Without advertising and a big public demand goods are produced in
only small quantities and really at a disadvantage. If a manufacturer
advertises and so creates a big demand he can afford to produce in large
quantities, hence, the larger the business, the better the product and the
more reasonably in price it can be placed on the market, so you see there
is every reason why the article which is most extensively advertised is
most extensively produced and under the most favorable conditions for
both the producer and the purchaser.Advertising may, therefore, be considered as the wind that fills
the sails of the ship of commerce, which enables her to bring reliable
merchandise to your home cheaper than it could be brought through
any other means.some years ago. But we may suggest
that all shop with more discretion,
and that certainly cannot be done on
the day before Christmas when a man
is liable to go into the crowded shops
and with hands in pockets and mouth
open order anything from a woolly
dog to a tin whistle for some staid
grandmother.Here is the hint: Look over the list
of books and magazines which the
Cultivator offers. Our clubbing list
offers almost everything in the line of
magazines and papers. The reviews
of books in our columns during the
past year have mentioned many most
valuable publications. These have
not entirely replaced, but are to a de-
gree at least improvements on, books
previously issued. They have touched
nearly every phase of orcharding, gar-
dening, animal industry and general
agriculture. The farmer and fruit
grower finds the practices of his call-
ing improving every day. If he is up-
to-date he has used institutes and con-
ventions to the limit. But better than
all is a good book or a good paper in
the quiet of the evening. The long
evenings following Christmas day will
give opportunity for the enjoyment of
just such a present. Good reading
matter is always fitting; it is not ex-
pensive; and its value lasts for many
a day. As many books have to be
ordered from Eastern publishers, send
orders soon for delivery at any spec-
ified date. With it will go a "Merry
Christmas" or presentation card with
name of the one sending the remem-
brance.settler up against strange problems in
a strange land has had little help from
promotion organizations. There has
gradually come a change and we are
now asking what can we do to advance
the prosperity of those of us now in
the field.The California Development Board
is calling for a great conference of
producers and business men to be held
in San Diego next month to discuss
marketing problems. This combina-
tion should result in something tangi-
ble and workable or at least an in-
spiration to effort which will ultimate-
ly lead to the workable.Another movement in Riverside
County has our entire approval. It is
a County Chamber of Commerce with
representatives or delegates from local
Chambers of Commerce in all sections
of the county. Farmers and bankers,
fruit growers and merchants, garden-
ers and professional men meet and
discuss advancement of the people by
the people and for the people at
home. We recently attended the
monthly session held at Indio and at
Thermal on the Colorado "Desert." By
desert we mean a place where they
grow a thousand crates of onions per
acre, fig trees bigger than a house in
two or three years and dates the like
of which the Arab or the Algerian
never tasted.But pardon us if we defer telling
of this meeting and of the productions
of the land till another issue. The
engraver was unable to reproduce
some of our photos in time.**Agricultural Notes**The Hawaiian Sugar Planters' As-
sociation has just closed its annual
convention in Honolulu.The Austria-Hungarian government
has issued a decree prohibiting the ex-
port of sugar beet seed from the em-
pire.The German government has issued
notice to all sugar refineries that they
are not permitted to sell any of their
residue to alcohol manufacturers.It is estimated that the potato crop
of Ontario, Canada, will be 25 to 40
per cent short because of rot caused
by continued wet weather during the
summer.Large quantities of American
canned tomatoes and puree are finding
a market in Leeds, England, because
of difficulty in obtaining such supplies
usually secured from Italy.The government of Guatemala ex-
tended an invitation to American
manufacturers and exporters to send
exhibits to the National Exposition of
Guatemala and Fiesta of Minerva, be-
ginning October 31.According to the International In-
stitute of Agriculture at Rome, the
production for the year 1914 (ending
February, 1915) was 3,914,048,000
bushels, as against a production in
1913, of 4,241,528,000 bushels, that is
92 per cent of the previous year.A test is to be made in the United
States of various raw materials from
the Hawaiian Islands, including kiawe
beans for their alcohol-producing
qualities and kukui nuts for oil, also
honey and wax and tamarinds, with a
view to ascertaining to what extent
they may be developed into products
of commercial value.Sugar and chocolate, because of
their strength giving properties, are
being supplied as a part of the daily
rations of soldiers fighting in the
trenches in various parts of Europe.
It has been found that a liberal allow-
ance of sugar greatly increases a sol-
dier's ability to resist fatigue and
cold, while it also gives him added
strength for muscular work.The estimated number of stock hogs
in the United States on September 1
was about 7.2 per cent more than on
the corresponding date last year, ac-
cording to reports made to the bureau
of crop estimates, United States de-
partment of agriculture. Figures
given earlier in the year showed that
on January 1, 1915, the total number
of swine on farms in the United States
was 64,618,000, valued at \$637,479,000.There are six mills in Hankow and
Hanyang, China, engaged in extracting
oil from soy beans, the capacity of
these mills being about 8,000,000
pounds per annum. This oil is used
in China principally for cooking pur-
poses, while in Europe and America it
is used in the mixture of paints, as it
has a semidrying quality. Hence its
exportation depends largely on the
price of linseed oil, its chief com-
petitor.Specialists of the United States de-
partment of agriculture have pro-
duced a new and simple device for
sampling grain, seeds, and other ma-
terial. Its purpose is to secure a re-
liable sample from a larger portion
of the material to be examined than
would be possible otherwise. The
principle is the distribution, by grav-
ity, of the material to be sampled
over a cone which is provided with
separate ducts in a way to insure
thorough mixture of the grain.

Agricultural News Notes



of the Pacific Coast

Northern California

The university farm school at Davis has an increase of 15 per cent in its attendance.

The almond crop of the Capay Valley in Yolo County is this year estimated at about 625 tons.

Thirty-nine tons of pork on the hoof were shipped out of Orland, Glenn County, one day last week.

A fine display of almonds was sent by Orland, Glenn County, growers to the Riverside County fair recently held at Riverside.

Many shipments of California canned fruits are forced to go around the Horn now because of the filling up of the Panama Canal.

The California Creamery Operators' Association will meet at San Francisco on the exposition grounds for three days, beginning October 28.

Two hundred and eighty-four carloads of deciduous fruits were received in the New York market from California the first week in October.

The California Ripe Olive Association announces a meeting of its executive committee on Friday, October 29, at its San Francisco headquarters.

The Sonoma County Grape Protective Association has decided to join the California Viticultural Association in combating the tax on wines and brandies.

Members of the Poultry Federation at Penn Grove, Sonoma County, gathered at the ranch of H. M. Bailey and helped him to rebuild a brooder house which was destroyed by fire.

Twelve thousand five hundred acres of rice were this year planted in the Richvale, Biggs and Gridley sections of Butte County. Most of this acreage is planted to the Waterbune variety.

A three days' apple school is to be held at Sebastopol during the first week of December by the Sebastopol Agricultural Club under the supervision of the state agricultural college.

Marysville is in gala attire this week. The festivities last until Saturday night, October 30, when a Mardi Gras ball will be held on the streets of the city to close the week's rice carnival.

The Sebastopol Agricultural Club at its last meeting elected the following officers: Charles King, president; Mrs. Hilda B. Nielsen, vice president; Mrs. A. Fiala, secretary; Mrs. M. King, recording secretary and treasurer.

The Glenn County farm bureau has elected the following officers for the coming year: D. C. Cowan, president; S. C. Davis, vice president; G. W. Troxel, Larkin; W. W. Foster, Corda; S. S. Havenor, Jacinto, and A. E. Linstrom, Orland, delegates at large.

The California Draft Horse Breeders' Association elected the following officers at its annual meeting in San Francisco: President, Henry Wheatley, Napa (re-elected); vice president, Al A. Smith, San Francisco; secretary-treasurer, E. W. Westgate, Rio Vista; directors, Professor True, University Farm, Davis; Professor Jenkins, Stanford university; T. McCormick, Rio Vista.

Central California

The rural credits commission held hearings at Fresno, October 20-21.

Hanford growers have subscribed about \$4500 to the Peach Growers' Company.

The Peach Growers' Company held a meeting at the Wolter's Colony on Friday, October 22.

The Oakdale branch of the Almond Growers' Exchange sent out a shipment of 57,000 pounds of almonds last week.

The Stanislaus Poultry Association has issued its premium lists for its show, to be held in Modesto, December 1-3.

The first prize in the potato growing contest of the Kern County high school was awarded to Leslie Haupt of Bakersfield.

Peach growers of the Manning school district of Fresno County have subscribed over \$1500 to the Peach Growers' Company.

The Orchardists' Committee of the Watsonville Apple Distributors is discussing the advisability of securing a farm adviser for Santa Cruz County.

Two thousand acres of Kings County lands will be planted to fruit trees this fall. Peaches, olives and apricots will be most generally planted.

The Porterville Citrus Association has arranged to cooperate with local employment bureaus in securing help in the community so far as possible.

Charles Boyd of the Dakota Colony is the prize winner in the potato growing contest carried on by the agricultural department of the Kerman union high school.

President Giffen of the Associated Raisin Company has announced that the raisin company will take no part in the organization of the Wine Growers' Protective Association.

The directors of the Stanislaus County farm bureau held a meeting in Modesto Saturday, October 23, to discuss methods of increasing interest and membership in the locals.

The Merced County Swine Breeders' Association held its semi-annual meeting at Gustine Saturday, October 16. C. R. Schaffer of Atwater is president of the association and A. W. Morley of Plainsburg, secretary.

Manager Madison of the Associated Raisin Company has issued a letter to raisin growers asking them not to rush their raisins to local packing houses but to extend deliveries as far as possible to avoid congestion.

The Associated Raisin Company is having considerable difficulty in handling raisins offered by growers because of shortage of cars, embarrassing the association not only in shipping out raisins but in slow receipt of box shock.

A portion of the canal that converts the water from the Kings River into the canal of the Alta irrigation district was destroyed last week. It is charged that this was the work of farmers who were served by canals lower down on the river which have been deprived of water by the diversion into the Alta canal.

Southern California

The Puente Walnut Growers' Association has already shipped out 15 carloads of walnuts.

Thirteen thousand six hundred and twenty-five acres of the old Chino ranch is in alfalfa.

A sharp advance is reported in the lima bean market during the past week. Many sales are reported at \$4.50 and \$4.55.

The Los Angeles County supervisors are being urged to place a bounty of \$30 on mountain lions. The state now offers a bounty of \$20.

The California Ahuacate Growers' Association held a most enthusiastic meeting in Los Angeles on Saturday. Over 300 were present.

Joseph Moore, of Saticoy, hauled in two truck loads of walnuts, 19 tons, from Saticoy to Carpinteria, a distance of 30 miles, in ten hours with a Yuba tractor.

Mrs. Anita Baldwin made large purchases of pure bred Holsteins at the Sacramento Holstein sale and has installed them on her ranch in Los Angeles County.

The seven counties joining in the Southern California exhibits at the Panama-Pacific have installed a fine moving picture theatre in the center of the California building.

The San Dimas Fruit Exchange has marketed 648,246 boxes of fruit this season. The management reports the average on Valencias for the year 60 cents above receipts for the previous year.

The Riverside County chamber of commerce visited the Coachella Valley Saturday, October 23, inspecting date growing sections and winding up with a quail dinner at Thermal in the evening.

The Chino beet sugar factory reports the biggest and fastest run ever made. The wind-up of the slicing campaign will be celebrated with a turkey barbecue. The campaign ended October 15.

Fifty-three thousand acres of land was recently added to the Imperial irrigation district by action of the board of directors and property owners who were desirous of having their land included in the district.

The Southside Improvement Association of Chino has decided to erect a canning factory to take care of peaches and apricots. This cannery is proposed to be one of a chain of three, the others to be established at Hemet and Pomona.

Forest fires which started in the oil derrick section of Ventura County swept over thousands of acres of fine bee pasture lands and caused great damage. Beekeepers estimate that it will be from five to ten years before these ranges will fully recover.

Stanley La Sha, a high school boy of El Cajon, California, has been declared the winner of the grand prize offered by the University of California to members of the Boys' Agricultural Club of San Diego County. The prize consists of a transcontinental trip to Washington, D. C.

The Coast

Willcox, Arizona, has a new creamery.

An Eastern paper predicts 50-cent wool by January 1.

Two carloads of Duroc hogs have been received in Yuma from Kansas.

The Farmers' Improvement Association of Mountain View, Arizona, met on October 27.

Thousands of head of sheep are being shipped daily from points on the Oregon Short Line in Montana.

January 3-8 is farmers' and home-makers' week at the New Mexico college of agriculture at State College.

Stockmen of Apache County, Arizona, have just secured a bunch of 30 pure bred Hereford bulls in Denver.

The Farmers' Association at Quincy, Washington, has erected a steel elevator with a capacity of 40,000 bushels.

The Utah Fruit Growers' Association has issued a bulletin of instructions in methods of picking and packing apples.

Whitman County's 20th annual fair, recently held at Colfax, Washington, had a new feature this year in the large poultry department.

The Yuma project in Arizona is being inspected by Dr. Elwood Mead, who is at the head of the irrigation department of the state university.

The live stock department of the Santa Fe railroad estimates that the fall shipments of cattle from the Seligman country, Arizona, will run about 20,000 head.

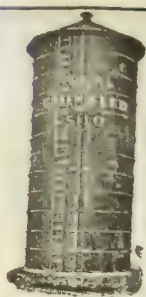
As the result of experiments on the Yuma reclamation project in Arizona the United States department of agriculture has determined alfalfa to be the best green manure crop yet found for that section.

The farmers' short courses to be given by the University of Arizona college of agriculture at Tucson will be held from January 3 to 15. The university has a new agriculture building which will be devoted to the uses of the farmers.

A band of 30 Mexican mountain sheep, believed to be the sole survivors of large bands of these animals that were once common throughout the Southwest, are being protected by forest rangers on one of the national forests in Arizona.

The advisory committee of the Arizona Cattle Growers' Association met with forestry officials in Phoenix the first of the month to discuss legislation for regulating number of herd bulls, limiting number of cattle allowed to each permittee, extermination of predatory animals and other matters of vital interest to stockmen.

Complying with numerous requests from the growers' councils, chambers of commerce, growers' and shippers' organizations in the states of Washington, Oregon, Idaho and Montana, the office of markets and rural organization of the United States department of agriculture has made plans to establish temporary headquarters in the Northwest for the study of the distribution of the 1915 box apple crop.



Making a Silo Pay

is an easy matter if you have the right kind.

THE UNIVERS-ITY FARM at Davis, Calif., last year bought an

Ideal Green Feed Silo

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Ten Choice Bred Berkshire Sows

Registered and Both Sire and Dams are Prize Winners at California Fairs. Call or Address

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We can now fill orders for Bred Sows, Boars of breeding age, Gilts 8 to 9 months old, and Weanling Pigs.

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Live Stock and Dairy



PLANS FOR A SWINE BREEDERS' ORGANIZATION

Written for the California Cultivator
By Sacramento Valley Contributor



PLAN is being discussed that has for its object some definite action along the line of hog cholera control in Colusa, Yolo and Glenn Counties.

There is a very active Swine Breeders' Association in Colusa County, with G. W. Roeber of Delevan its energetic and enthusiastic president, and State Veterinarian Chas. Keane has been working with this organization for some time.

Much good has been accomplished, but now it is being suggested that in order to bring about the greatest possible benefit to the industry in this section there should be some one in the employ of the counties and the state who shall have police power, be able to make and enforce quarantines as necessary, and whose entire time shall be devoted to looking after the swine interests in these three counties. This man should be a thoroughly qualified veterinarian who has had special training and experience with hogs.

It is thought that one man with an automobile can cover three counties satisfactorily and look after all outbreaks of disease. It is proposed that he treat all hogs free of charge for service—the owners of the animals to furnish the serum and virus. The cost of serum and virus has been reduced from two cents to one cent per cubic centimeter, so that with the arrangement suggested the work can be done at moderate cost. For instance the maximum dose generally given a mature animal is 90 cubic centimeters of serum, which costs \$1.80 plus the veterinarian's fee under old conditions. If this can be cut in two and the veterinarian's fee eliminated, it will make a great change in the situation.

It would be the business of this swine officer to see that dead hogs are not thrown in irrigation ditches or streams, and if it is done that the offender is punished so that the offense may not be repeated.

He would encourage the killing of buzzards and pigeons in the vicinity of infected premises and the destruction of stray dogs.

The farms where cholera is present would be effectively quarantined so that inquisitive friends or neighbors would not carry the disease to clean herds.

This is certainly a move in the right direction and should be given hearty support.

PRODUCTIVE SWINE HUSBANDRY

"Productive Swine Husbandry," by George E. Day, B.S.A., professor of animal husbandry, Ontario agricultural college, Canada, published by J. B. Lippincott Company, Philadelphia, at \$1.50 net. This is a magnificent book of 354 pages with complete index on heavy paper, with many illustrations and more of line engraving text figures.

"No effort has been made to avoid the practical sides of the subject in order that a certain type of schools might prefer the book. On the other hand the practical sides have been

placed foremost with the belief that all students as well as breeders should prefer to think of the subject in a practical way. An effort has been made, however, to treat the matter concisely and logically and arrange the topics in order. The chapters have been grouped into seven parts to make them more easily referred to by both students and breeders."

There are 35 chapters in the book, touching upon the place of the hog on the farm, types of swine, these two chapters comprising Part I. Part II touches upon breeding and selection; part III various breeds of swine, a chapter being given to each one of the breeds. Part IV, with seven chapters, touches upon results of experiments in swine feeding. This is one of the most interesting chapters for the practical swine breeder. Part V consists of five chapters and takes up management and feeding questions. Part VI with two chapters, marketing and curing. Part VII, four chapters, discusses fully buildings, sanitation, common diseases of swine, composition of feeding stuffs, swine literature, and one of the best features is a comprehensive index.

Of course there are tables giving composition of feeding stuffs. At the end of each chapter there is a series of review questions, these for the use of the student, also for the casual reader, for there is no better way of impressing the contents of a chapter upon the mind than to run over a series of a dozen or more questions upon the contents of that chapter. For instance, at the end of Chapter XXVII, which touches upon the care of young pigs, the questions asked are:

"Give a plan of keeping new-born pigs warm in very cold weather.

"Tell of the importance of the first milk soon after farrowing.

"Tell of the management of apparently lifeless pigs when first born.

"Give plans for teaching sucklings to eat.

"How may young pigs be induced to exercise?

"When is the best time to wean pigs? Give reasons for variation.

"Give suggestions regarding best feeds after weaning. Why avoid giving corn only?

"What is the cost given for pigs six weeks old? How is it calculated?

"What variation in these figures would be necessary for the present prices of feed?"

This book is an excellent one for the swine breeder.

SCABIES QUARANTINE MODIFIED

More than half of the territory now under quarantine in California for sheep scabies will be released on October 15. This order frees 43,243 square miles, leaving 41,710 square miles still under quarantine in California. Including the states of Colorado and Texas there will be when the new order goes into effect only 324,827 square miles still under quarantine for this disease. Originally, there were 1,784,596 square miles quarantined. The work of eradicating scabies in the three states named is being carried on by cooperation between the United States department

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Nampa, Idaho, has shipped three carloads of honey this year.

of agriculture and the state live stock sanitary officials.

The territory to be released in California includes the following counties: Butte, Yuba, Sacramento, Yolo, Solano, Lake, Contra Costa, Alameda, San Francisco, San Mateo, Santa Clara, Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, San Diego, Imperial and Riverside.

A LIVE STOCK "WAVE"

Written for the California Cultivator
By Special Live Stock Contributor

A part of the great "back to the land" movement that is sweeping over the country now is a desire on the part of many people in all walks of life to own live stock. Go into any small or medium sized town and you will find live stock topics being freely discussed and a good many going into the business in one way or another. And the live stock population of the farms of the state is rapidly and constantly increasing.

There are lawyers and store keepers and doctors and barbers and bankers who are getting small places close in where they can keep a few pigs, a half dozen cows or a little flock of sheep or chickens. Some of these do not get much but occupation and some pleasure, with an opportunity to pay feed bills, but there are others who build up profitable enterprises that eventually take all of their time and provide healthful and remunerative occupation.

There are not many healthy, normal persons who do not have an inborn love for live animals and derive a great deal of pleasure and satisfaction from associating with and caring for them. This is not always so strongly manifested as with the man who said "the more I see of people, the better I like hogs," but there are a great many people who would rather associate with good hogs or sheep or cattle or horses or poultry than with some folks.

Aside from sentimental or partly sentimental reasons for raising live stock—because the grower likes to be "around" and "with" the animals, there is a sound economic reason for growing them. There is an increasing demand for meat and milk and other live stock products. There will unquestionably continue to be high and low "spots" in the markets, due to periods when the marketable supply is small or large, but those best in position to know of the world's prospective needs and supply predict a constantly increasing demand at prices that cannot be permanently low. So the future of the live stock business seems bright, not only for the farmer grower but for the amateur who becomes a professional, and the beginner who eventually gives it up at a financial loss may cheerfully charge his experience to "recreation" or "sport"—for he will doubtless get as much of pleasure and satisfaction from the care of animals as from many other pastimes.

THE SOW'S FEED

Great care must be taken to feed the sow properly. If she is not being properly fed the little pigs will show it. If the pigs follow the sow around very much and pull at her teats, it is an indication that she is not giving enough milk, and more feed should be given to stimulate milk flow. When a sow is overfed, causing a heavy milk flow, scouring is generally produced in the pigs. If this happens, cut down the sow's feed immediately. Give the sow 15 to 20 grains of sulphate of iron (copperas) in her slop morning and evening, and if necessary increase the dose until results have been obtained.

EXPORTS OF CHEESE, BUTTER AND BUTTER FATS

Cheese, butter, and other butter fats are again becoming important factors in our export trade after a long period of comparative inactivity. Fifteen or 20 years ago the United States was selling abroad between 20,000,000 and 30,000,000 pounds of butter, from 50,000,000 to 80,000,000 pounds of cheese, and from 5,000,000 to 10,000,000 pounds of imitation butter annually. In later years, however, exports of this class decreased in a marked degree and in the fiscal year 1914 had fallen far below the quantities named. In the year just ended there was a distinct revival in all these lines, with totals closely approximating the high levels touched in the decade from 1890 to 1900.

The large gains made by domestic dairy products and butter substitutes are well illustrated by figures published by the bureau of foreign and domestic commerce. Butter, usually averaging about 3,500,000 pounds annually in our export trade, in 1915 went to nearly 10,000,000 pounds. During this period imports of butter were reduced by more than one-half, falling from a little less than 8,000,000 pounds in 1914 to less than 4,000,000 pounds last year.

American cheese, running at about 2,500,000 pounds a year, went to 54,000,000 pounds in the fiscal year 1915. Here also, as in the case of butter, the trade balance was transferred to the export side, for the year's imports of cheese last year only totaled 50,000,000 pounds, a decrease of 13,750,000 pounds from the total for 1914.

Exports of condensed milk, usually exported in sums valued at between \$1,000,000 and \$2,000,000 annually, in 1915 rose to \$3,000,000 in value, the quantity (37,000,000 pounds) being double that of 1914.

Imitation butter contains in addition to oleomargarine oil some butter fat. The exports of this article also doubled, rising from 2,500,000 pounds in 1914 to 5,250,000 pounds last year.

England has become our largest foreign market for butter, cheese and condensed milk, having taken 3,333,333 pounds of butter, out of a total export of 10,000,000 pounds; 48,500,000 pounds of cheese, out of a total export of 54,000,000 pounds; and 4,000,000 pounds of condensed milk, out of a total export of 37,000,000 pounds. Canada, Cuba, Panama, Australia and Venezuela also take considerable quantities of American butter; Panama and the West Indies are important markets for our cheese; while Cuba, Belgium, the Netherlands, China, Japan, Hongkong, Russia, Chosen, Panama and Brazil take large amounts of American condensed milk.

These exports, while important, represent a very small proportion of the annual products of the 60,000,000 cattle on American farms, valued at more than 2,333,333,000. As long ago as 1909 the latest period covered by the national census, we produced 1,619,000,000 pounds of butter, 321,000,000 pounds of cheese, and 5,814,000,000 gallons of milk, while the quantity of oleomargarine on which internal revenue tax was paid in 1914 aggregated 142,000,000 pounds.

By the light of the farm adviser's Ford the Farm Improvement Association of Lehi, Arizona, met in front of the meeting house which was pre-empted by the singing school.

Jane Korndyke of Riverside of the Morris herd topped the sale for cow prices, bringing \$1550 after spirited bidding.

Dairymen Attention! Stockmen

Don't fail while you are at the Exposition to look into the Silo question. Of course, there is no longer any question but that every feeder of stock, either dairy or beef, needs a silo. The question is Which Silo? If you will carefully investigate the

Remco Redwood Stave Silos

near the dairy barns, compare them with all other makes and note their many advantages you will surely be convinced this is the silo for you. We build them in all sizes and dimensions exactly as you want them for your particular needs.

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in diameters from two inches to twelve feet. See our exhibit of pipe and tanks in Machinery Hall.

All our silos, tanks and pipe are designed by our engineers to meet every condition. Made in our big factory from Clear Air-Dried Redwood; selected from stock of 40,000,000 feet which we carry at all times, and sold direct to you.

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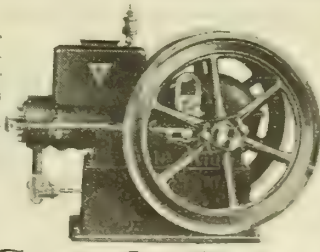
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from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. Does not blister or remove the hair and horse can be worked. Page 17 in pamphlet with each bottle tells how. \$2.00 a bottle delivered.

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Thoroughbred Poland China Swine
High Grade Stock of Best Strains
Young Stock For Sale

M. BASSETT Hanford, Cal.

CATTLE SHOW WINNERS

Continued from Page 411

many Brown Swiss cattle on the Pacific Coast and the interest in the breed is increasing. Their strength and hardiness combined with good milking ability commend them to many localities.

The Ayrshires

As was noted last week there was a remarkable show of Ayrshire cattle.

The Ayrshire is a wonderful dairy animal and any critical observer is impressed with the extreme to which the point of dairy excellence has been carried.

The head of a typical cow is clean cut and refined, denoting intelligence and dairy temperament; there is no beefiness nor coarseness about the neck and throat, the withers are sharp and neat as is required in ideal dairy form. There is ample chest and heart room, the back is straight and sharp, the middle of ample capacity, the rump and hind quarters beautifully square and even but without beefiness. There is ample room for the square, symmetrical udder that extends well forward and back is as perfectly formed as though it were made to order. There is ample and tortuous veining and the clean cut legs of good quality are set squarely under the four corners of the body. In short she is a model of dairy perfection. And the heifers and heifer calves are "regular little cows."

The spectacular show presented made many friends for the breed. There was an abundance of quality in the individuals and they were assembled in sufficient numbers to make a very impressive exhibit.

J. W. Clise, Seattle, Washington, had more first prize winners than any other exhibitor, although the competition was very keen and superior animals were shown from the herds of E. B. McFarland, Steybrae Farm, San Mateo; W. J. Domes, McCoy, Oregon, and the Oregon and California agricultural colleges.

The Ayrshire Breeders' Association had an attractive booth from which valuable information concerning the breed was distributed.

Holstein-Friesians

There was a royal battle in the Holstein classes; a wonderful lot of cattle, beautifully fitted and well brought out, contested for the honors.

There was the keenest of interest in the judging of the black and whites from the time the aged bulls were led in the ring until the last of the group prizes were awarded.

There were very few common or inferior individuals in the entire show, and it was no easy matter to make the selections. Judge W. H. Standish of Lyons, Ohio, performed his task carefully and well.

Honors were well divided. John L. Smith of Spokane, Washington, has a wonderful herd of cattle and is one of the great constructive cattle breeders of America. He breeds the cattle that win for him and no one knows better how to fit and show than he. His great bull, Hazelwood Ormsby Posch, was first prize aged bull and grand champion of the show, and he had winners all down the line.

Wm. Bishop of Chimacum, Washington, had a big herd on exhibit and won grand championship on the aged cow, Bonnie Ormsby Lass, a cow of wonderful capacity with a big symmetrical udder of excellent quality and having wonderful refinement of head and neck and an exceptionally mellow hide. He had many other winners.

R. R. Cartwright of Angels Camp had a popular prize winner in the beautiful cow that is illustrated and won many other prizes. His cattle were not as highly fitted as were those of the F. H. Porter herd from Halsey, Oregon, who had many at the head of the list.

The Carnation Stock Farm, Seattle, Washington, made a showing that was

a credit to the breed and was prominent among the winners throughout all of the classes. This enterprising concern has maintained an exhibit of superior cattle that has been one of the big attractions of the fair and it has been of inestimable value to the Holstein-Friesian industry.

A number of good cattle were shown by Laura J. Frakes and Brother of Sutter Creek and by the California and Oregon agricultural colleges.

The Guernseys

The strength of the Guernsey breed on the Pacific Coast was reflected in this show, which was a truly international affair when the quality of the contestants is considered. Had it been possible for the Eastern herds to have been exhibited it would have been the greatest Guernsey aggregation ever brought together, both for numbers and quality.

W. H. Dupee of Santee has a herd that ranks with the best in the world, and the animals exhibited were brought out in the pink of condition. Both grand championships went to this herd, and many other prizes throughout all of the classes. Mr. Dupee has maintained a view herd at his own expense at the exposition in the interests of the breed for some time.

W. H. Saylor of San Francisco won many ribbons on representatives from his famous herd of heavy milking, high testing animals. His cattle had not been fitted for the show as had some other entries, but they are splendid representatives of profitable dairy animals.

A. B. Humphrey of Mayhews was another prominent winner. His cattle are bred for their ability to produce profitably in the dairy and they are splendid individuals.

A. L. Gile of Chinook, Washington, won many important prizes on cattle that are royally bred, good producers and shown in fine condition.

D. H. Looney of Jefferson, Oregon, has another topnotch herd that was well up in the prize list.

Mrs. Annie S. Lathrop, Stanford university, was creditably represented

by individuals from that old established herd.

Secretary W. H. Caldwell of the Guernsey Association was in attendance and a fine meeting and banquet was held. Much valuable advertising matter concerning the breed was distributed.

Jerseys

California herds made a very creditable showing in the Jersey classes.

By many the most important class in the show was considered to be that for five cows in milk. This was won by Guy H. Miller of Modesto who showed 11 head and won 12 prizes.

The N. H. Locke Company of Lockeford, showed 19 head and won 21 prizes, and all of these cattle were bred by the exhibitor. Practically all of them are descendants in the first or second generation of the great bull King's Valet.

B. D. McGehee of Modesto had a prizewinning two-year-old bull.

Another herd of great dairy excellence, but not in high show condition, was that of S. P. Kelly, Ferndale, and the herd of S. F. Williams of Chico, was the subject of much favorable comment. Mr. Williams has been a prominent winner at California fairs.

The herds from Oregon and Washington won the bulk of the prizes in the breeding classes, including both grand championships. The owners of these herds showed a wonderful lot of beautifully finished cattle of great quality. They are by H. West, Scappoose, Oregon; C. P. Hembree, Monmouth, Oregon; F. E. Lynn, Perrydale, Oregon; E. L. Brewer, Satsop, Washington, and Guy C. Chapman, Pomona, Washington.

The American Jersey Cattle Club booth and representation was a clearing house for information concerning the breed and a popular meeting place for breeders and dairy men.

This International Show has been of greater value to the live stock industry of the Pacific Coast than it is possible to estimate at this time. The benefits from it will be continuous and far reaching.

Willowmoor Ayrshires

Winners of all Championship and Higher Awards at Panama Pacific Exposition

The Ayrshire in official and competitive tests has proved herself to be a most economical producer of milk and butter, yielding the largest possible amount for the food consumed, and at the least possible cost.

The Ayrshire is the Dairy Rustler, thriving and paying a profit on the least natural food supply, because she is a vigorous feeder, not at all dainty in her appetite, eating with a relish everything that comes in her way in the line of forage; good grass, poor grass or browse, all is food for the Ayrshire cow.

While the Ayrshire is strictly a dairy cow, she fattens so quickly when dry, and is so heavy in hind quarters and loin that she is a favorite with butchers.

This herd of three hundred head of registered Ayrshires holds first place as producers in the show ring.

Peter Pan, one of our herd bulls, was Grand Champion at the Royal Agricultural Show, Great Britain, before imported, at the National Dairy Show, Chicago, and at the Panama-Pacific Exposition, and wherever shown on the Pacific Coast. Production records of his daughters place him at the head of producing Ayrshire bulls.

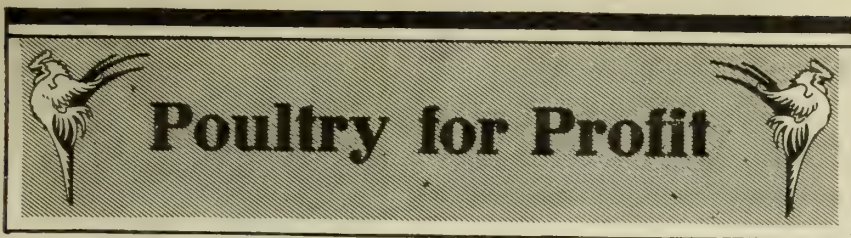
Stock sold on production records of dams; all tests 365 days.

Of eight world's records made by all Ayrshire breeders in America since 1900, this herd has made three.

Catalogue and prices upon application.

J. W. Clise

Willowmoor Farms Redmond, Washington,
(near Seattle)



INCUBATOR CHICKS OR CHICKS HATCHED BY HENS, WHICH?

Written for California Cultivator
By Jos. E. Blackshaw



In the Cultivator under date of September 9, 1915, appeared an article denouncing incubator chickens as breeders.

In reading the article there came to my mind a time in a large Eastern manufacturing plant when an innovation was made whereby instead of 100 to 150 articles being turned out per day, there were made from 700 to 750 of similar articles, and more perfect than formerly, per day. The man who used to make 100 to 150 per day, coming in, was asked "What do you think of that?" As he turned and almost ran away he said "It can't be done!"—in spite of the fact that it was being done.

Now I will admit that many persons are unable to turn out good chicks from an incubator; also there are many blacksmiths and carpenters who cannot turn out good work, but none the less there are quite a number of good blacksmiths and good carpenters, although there are comparatively few good ones. It is so in educational work; of all our school teachers how few really excel! But must we blame our normal schools and say they are a failure because many who graduate are poor teachers? They had the same textbooks, the same teachers; why then were not all the graduates equally good? And so it is with the incubation and raising of chickens!

Give 100 eggs from the same flock, laid on the same day, to each of five men, and some of them will hatch hardly any; others will hatch a large percentage of all the eggs, even though the machines are of the same make and run in equally good cellars! Why?

Then again some of them will hatch a nice looking bunch and in five or six weeks have few (if any) left; and any still living will be miserable, scrawny specimens. Some will have 95 per cent of all hatched at the end of five or six weeks still bright and happy. Why? Simply because the human factor comes in; there is that much difference between individuals, and for that reason alone there will always be good room for the man or woman who can properly run an incubator, run it so as to turn out strong, healthy, livable chicks.

Now this is not all a built-up theory of what should be, but is drawn from many years' incubating and raising.

Thirty-five years ago the writer made his first incubator, and from 60 eggs put in incubator hatched 42 fine chicks and raised all but one to maturity by artificial methods; they never heard the cluck of a mother.

Last spring I built (so far) my last incubator. In it I put 1243 eggs and from these eggs I hatched 1055 chickens! The eggs were laid by hens who for several generations had been hatched and brooded artificially. I sold several hundred to different parties, all of which were reported as doing fine; further, my incubator hatches this year averaged over 80 per cent of all eggs put in incubators, and all these eggs were from the same hens,

and I have today in my own yards about 600 pullets from ten weeks to seven months of age that are the equal of any chickens for vigor.

I believe that I can beat the old hens any year in raising a certain number of good pullets from 1000 eggs.

Of course I know too many day-old chicks are sold that under any system of raising could not make healthy, vigorous hens, even though their parents had been all that could be desired; because some day, some night or some hour, something had gone a little wrong with incubation.

It takes grit to cull out fowls properly. One of my positive rules is "not to breed from male or female who has in any way been sick," even though it were only a slight cold. There, I believe, is one great point!

WATER FOR POULTRY

One of the most important things in summer is to have plenty of fresh water for the fowls. The water vessels should be refilled twice a day and should be thoroughly rinsed out each time. It will not do to fill them by merely adding more water. Particularly is this the case if the water is not well protected, for then it becomes a constant menace to the health of the flock.

Anyone who has seen a number of fowls gather about a fresh supply of water on a hot day and noticed with what eagerness they drink, will realize how much the freshness of the water is appreciated.

It is true fowls will drink out of a mud puddle at times, but perhaps this is done for a change, at any rate it does not prove that stale water will answer the purpose as well as fresh.

It is of course more advantageous to have running water through the yard or yards but where this is not possible it should be seen to that the water supply is kept fresh. On one farm that came to the attention of the writer the poultry yards ended at a clear running brook, thus making an ideal watering place for the fowls.

In getting new poultry or making a change in the drinking vessels it is well to keep watch of the fowls for a short time. It has been the experience of the writer that poultry accustomed to certain styles of drinking fountains may not take to the new ones at once if these are of different design. This is more apt to be the case with fowls that have been used to getting the water from open drinking vessels as they seem to have difficulty in bringing themselves to drink from fountains where the water is confined.

It would seem that where water vessels are given the requisite amount of attention that the open drinking vessels if not too shallow and properly placed and protected, are preferable to those fountains where the water is confined except for the small space from which the fowls obtain the water.—Farmers Guide.

The Reedley chamber of commerce has decided to hold a fall festival some time in December.

DROOPY WINGED CHICKENS

While a few beginners, observing the long wings of their Leghorn chicks, congratulate themselves on rapid growth, a great many of the more observing beginners write to Helen Dow Whitaker of the poultry division of the state college of Washington, asking how to prevent them. In reply Mrs. Whitaker states that droopy wings and loose feathering are more frequent among the Leghorns and other lightweight breeds than among the heavier birds which seem to use food first for frame and muscles and later for feathers. In general, drooping wings show lack of assimilation of sufficient nourishment in the food to keep up with rapid feathering. The following are conditions favoring them: Overheating, crowding, impure air; but especially lack of exercise and lack of green food in a rather rich ration, which finally results in indigestion. The chick is unable to assimilate the nutriment in his food and he suffers from lack of nourishment just as surely as though he were underfed.

To avoid droopy wings, avoid the conditions that induce them. Feed a ration containing oats, first rolled oats, breakfast food form but uncooked, from the fourth week on sprouted oats; also feed cracked wheat and after the fourteenth day an equal bulk of finely cracked corn. For a mash use to every 10 pounds of bran at least one pound each of dry granulated bone and high grade beef scrap. Best of all, give chicks all the clabbered milk they will drink but do not let the milk become bitter before feeding. Keep the chicks hungry and keen for each meal, feeding little and often. Twice a day feed an abundance of finely cut, tender, juicy green food. Send every chick to bed with a comfortably full crop. Under these conditions, if the chicks are not of weak stock, few will have droopy wings.

UTILITY EXHIBIT

At a meeting of the San Francisco Poultry, Pigeon and Pet Stock Association, held in the rooms of the California Development Board in the Ferry building on Sept. 16, T. E. Quisenberry, poultry commissioner of Missouri, and superintendent of poultry at the Exposition, gave an interesting lecture illustrated by 95 lantern slides regarding the one-hundred-acre poultry experimental farm which is maintained by the state of Missouri with an appropriation of over \$81,000, supplemented by an additional \$20,000 for extension work, etc.

The chief object of the meeting, however, was the establishment of rules and regulations governing the utility division of the Panama-Pacific Exposition Poultry Show, Nov. 18 to 28. It was decided to call upon all poultry keepers for suggestions in regard to the methods of handling this new feature of poultry shows. The American Poultry Association is preparing a utility standard which will no doubt be adopted at the convention to be held at the time of this show, but any rules or plans established at that time cannot be applied to this show. Poultry keepers everywhere who breed poultry for utility or market purposes are urgently requested to send their suggestions to T. E. Quisenberry, superintendent of poultry, Panama-Pacific Exposition, San Francisco, at once.

ELIMINATION OF BACILLARY WHITE DIARRHEA

The Extension Service and the experiment station of the Massachusetts agricultural college will cooperatively undertake a campaign to rid the flocks of Massachusetts of bacillary white diarrhoea among chicks—a disease which yearly causes thousands of dollars of loss to poultry-keepers, and which is transmitted by infected hens in the breeding pens. These hens can be detected by a laboratory test of their blood. The college will, so far as its facilities and force of workers permit, make this test for all owners who apply for it, charging therefor in order to cover a part of the cost the sum of five cents per hen.

The blood samples will be taken by a man working under the extension service; the laboratory test will be made in the veterinary department of the experiment station.



NOW is the time to Feed Coulson's Egg Food

to your pullets as well as your hens, commencing at the age of three months. This enables them to rapidly complete their growth and get down to the business of egg laying. Write for free book "Chickens" and don't be put off with any other egg food.

Coulson Co.
Petaluma, Cal.



VEGETINE Makes Bank Balances

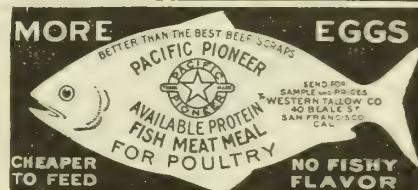
We can save you from ten to twenty-five per cent on your feed bills. This means the difference between success and failure in the chicken business.

We have a wonderful new poultry food that contains more protein than Bran, which sells at a price thirty-five to fifty per cent cheaper than Bran. Write for circular "Food for Thought and Feed for Chickens," which tell all about this great money saver.

Mr. Kline of Burbank, Cal., one of the most successful poultrymen of Southern California, says:

"I have been using VEGETINE for the past four months on my whole flock and as far as I am able to determine at this time I am fully convinced that it is a saving in food price. We have gotten up to and above normal egg yield during the time at an appreciably lower cost."

Globe Grain & Milling Co.
Los Angeles Colton San Diego

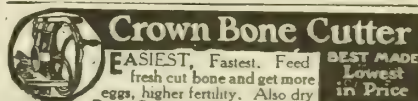


Baby Chicks
All standard varieties of heavy breeds. Very fine S. C. Black Minorcas. McFarland Strain of White Leghorns. "Quality" our motto. Booking orders for fall delivery. Established 1909.

ARTESIA HATCHERY

Capacity 75,000 eggs.

F. W. Foster, Prop.



BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery. **EXTRA SELECTED BLACK MINORCAS & WHITE LEGHORNS OUR SPECIALTY** Our Chicks are hatched in the **BEST VENTILATED HATCHERY IN CALIFORNIA** INSTRUCTIONS HOW TO RAISE CHICKS FREE

Hicks Jubilee Hatchery,

Route 2, Box 22,
Petaluma, California

Money Making Little Liners

Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers.
LINER RATES ARE 12c PER LINE PER ISSUE
No Ad Accepted for Less Than 36c Per Issue. Figure 6 Words to a Line

MACHINERY

USED RANCH MACHINERY
USED WINDMILLS—WINDMILLS NEW
8-ft. steel aeromotor, steel tower, complete, \$30; 10-ft. steel direct mill, \$18; 10-ft. wood mill, fine, \$10; 10-ft. steel Star, \$25; 12-ft. steel mills, \$39.

USED TANKS—TANKS NEW
Redwood, 1000, \$13; 2000, \$19.50; 3000, \$25; 4000, \$29; 5000, \$35; 10,000, nearly new, \$55; 25,000, with 20-ft. stand, \$75; 35,000, 40-ft. stand, \$190; 50,000 with stand, \$250. We manufacture new galvanized tanks—1000 gal., \$19.50; 2000, \$29.50; wagon tanks, irrigating pipe.

ENGINES—ENGINES
1½-h., \$25; 2-h. Fairbanks, \$35; or with jack, \$39; 3-h. R. & V., \$55; 6-h. Olds, \$68; 6-h. auto engine, \$25; 12-h. Stover, \$150; 11-h. White & Middleton, \$175; 28-h. Lambert, \$275; 50-h. Lambert, \$600.

PUMPS—PUMPS—PUMPS
Prices special this week only. Brand new 3 Horizontal, \$32.50; used 4 fine, \$38; 5 Hor., \$42.50; two 5 verticals complete, \$69; 6 ver., complete, \$75; nearly new 7-inch Krogh vertical complete; 50-foot shafting, \$125; 2 stage Krogh No. 3 pump, \$35; 2 stage 3 Byron Jackson, the latest complete, \$110; same thing in 5-inch, \$125, cost \$100, used year; No. 8 Hor., \$90; two-stage Hor. No. 5 Byron Jackson, cost \$390, for \$125; 6-inch Rotary new, \$50; 5x6 Duplex new, \$45; Meyers Duplex, \$30; Pitcher pumps, new, \$2.75; hand force pumps, with or without cylinders, rods and piping.

BRASS CYLINDERS.
Double 4x60, \$25, cost \$65; double 5-inch, \$35, cost \$70; double 6-inch, \$38; double 8-inch to 60, good as new, \$70; 7-inch Stearns, cost \$200, good as new, \$70; 10-inch single, \$25; others too numerous to mention.

GATES—L'S—T'S—PIPE—FITTINGS
Gates, foot valves, think of new gates and checks, 8-in., at \$12; 6-in., \$6; 1½ new galvanized pipe, 3000 feet left, \$8.75.

USED RANCH MACHINERY
Mowers, \$15 to \$25; mouldboard, disc riding plows, \$17 to \$29; hay rakes, \$15 to \$18; 6 gang disc for tractor, ½ price; beet seeder, \$29; \$160 Superior grain drill, \$75. 12 disc cultivator, crusher and roller, \$19; balers, headers, scrapers. Anything ranchers need.

BOILERS, PIPE, FITTINGS, ETC.
We do no fake advertising. Trade us what you don't want for what you need. If we haven't what you want, can find it for you quicker and cheaper than you can. We buy first-class used machinery, if price is right. No junk or stolen machinery wanted. DEMMITT CO., 120 N. Main, Los Angeles. A5191, Bdwy. 3650.

For Sale—Used and new Gas Engines, 2 H. P. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild Gas Engines correctly. Get prices, Lloyd, 806-808 N. Main St., Los Angeles. F7020—Broadway 4103.

Machinery of Every Description Bought and Sold—Buttress & McClellan, 203-207 N. Los Angeles street, Los Angeles. Broadway 8098; A5473.

For Sale—16 ft. aeromotor pipe and rods complete, cheap. 12 ft. aeromotor, like new, \$38.00. Ranchers' Exchange, 1630 So. Main, Los Angeles, Cal.

TREES

Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

Choice Lot of One-year-old Apple Trees; first-class stock, 4 to 5 feet; \$5.00 per 100. Full line of nursery stock at equally low prices. Catalogue and price list on request. Wirt Nursery, R. F. D. No. 1, Portland, Oregon.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoas, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

The "Chappelow" Avocado is the richest grown—over 29 per cent fat. Buds from the parent trees \$5 per 100 by mail or express prepaid. Address Wm. Chappelow, Route 1, Box 104, Monrovia, Calif.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Fig Trees. 25,000 two-year-old trees from 2 to 6 ft. high. Seventeen varieties. Write for price list. C. C. Terbush, R. F. D. 2, San Gabriel, Cal.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Budded Avocados—All varieties. Write for descriptive catalogue. Newbery Sherlock, R. F. D. 2, Pasadena, Cal.

TURKEYS

Turkey Eggs for Hatching—Eggs from fine Mammoth Bronze Turkeys, guaranteed fertile, \$1.09 per dozen, also some fine young stock for sale, \$15.00 a trio. Address, John Hayes, R. F. D., Hynes, Calif.

Wanted—To buy 50 small Bronze Turkeys and 24 young Guinea hens. Wm. Hert-rich, San Gabriel, Cal.

Mammoth White Holland Turkeys—H. McKusick, Calexico, Cal.

WANTED

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

LIVE STOCK

Big Type Poland Chinas—I have an extra good lot of strictly high class young boars from three months to one year old that are fit to head any herd anywhere. Visitors say they are the best they have seen. They have the large size, the good hams and shoulders, the strong arched backs, great length and depth of body, plenty of smoothness, mellowness and quality—in fact, they have two good ends and a good middle, are good lookers and money makers. Their dams are either from Illinois, Iowa or Missouri, or they are from dams whose sire or dam are from these states. These boars are sired by Iowa Wonder, who will weigh over 1000 pounds in show condition. He is a son of A WONDER, the greatest Poland China boar living or dead. These young boars carry the stamp of their sire and will sire pigs that will please you. Satisfaction guaranteed in every particular. I am overstocked. I have boars galore. I will sell them at extremely low bargain prices. No females for sale at present. The book on "THE HOG SUPREME, THE POLAND CHINA" will be sent to you free for the asking.

Yours for the BIG TYPE—the kind that grow faster and larger and have more pigs. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. Swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight, with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Del Dayo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding. BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

65 Head Registered Poland China Hogs for sale; all sizes, both sexes. None better anywhere. Large and medium type. \$20.00 and up. We will please you or refund your money. W. A. Young, Lodi, Cal.

Blue Ribbon Herd Duroc-Jersey Hogs, Service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F., 1915, prices. John P. Dagg, Modesto, California.

For Sale—Jersey Bull Calf, eligible for registration. Dam and calf first prize at Orange County Fair. Price \$50.00. Fine stock. T. H. Bowen, Route 2, Santa Ana, Cal.

Milch Goats—Two ¾ Toggs, does, 2 years, both bred. One ¾ Toggs, doe, 7 mo.; one 15-16 Toggs, buck, 5 mo. H. D. Minor, Wasco, Cal.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Milch Goats—Young Nubian Swiss does from heavy milking stock. For prices, etc., write Miss E. Stocker, 587 N. Broad St., San Luis Obispo, Cal.

Poland Chinas—200 head fine individuals, weanlings to eight months. Satisfaction or money refunded. Geo. V. Beckman, Lodi, Cal.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Navato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Ricconi Bros., Mountain View, Cal.

Poland Chinas—Young Stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

Glennview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

W. J. Hanna, Reaoks Ranch, Gilroy. Large type Poland Chinas; bred gilts. Service boars.

For Sale—One Saanen doe, three years old, also Saanen buck four months old. Add. Mr. Fred Hansen, Carpinteria, Cal.

Berkshires—Boar pigs for sale. Butte City Ranch, Butte City, Glenn Co., California.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

SEEDS AND PLANTS

Strawberry Plants of the following varieties: Gold Dollar (extra early, fine, our leader.) New Oregon, "Morse" and the famous Ettersburgs No. 80, and No. 112, price 75c (postpaid) per 100, \$3.50 per 1000. Foreman Bros., Corning, Cal.

Burbank Spineless Cactus—Hardest varieties, "Melrose" and "Special." Strong, matured slabs, \$8.50 per 100; \$50 per 1000. Labranza Ranch, Athlone, Merced Co., Cal.

For Sale—First class re-cleaned alfalfa seed that has been inspected in the field by the Horticultural Commissioner, and is free from noxious weeds. Also choice Peruvian seed. O. C. Nordahl, Bard, Cal.

Fifty tons of choice white Egyptian corn for sale at \$30.00 per ton f. o. b. Lemoore, also a few tons of choice feterita at same price. C. R. Flory, Lemoore, Calif.

Peruvian Alfalfa Seed—Hairy varieties, also Algerian wheat. S. P. Huss, Yuma, Arizona.

Ahuacate (Alligator Pear) seed for sale, \$4.00 per hundred. Mrs. L. M. Chaffee, Box 742, Sherman, Cal.

POULTRY

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

S. C. Rhode Island Reds, Lester Tompkins and Winslow strains eggs for hatching. Day old chicks. Prices on application. Raines Court Poultry Ranch, Zelzah, Calif.

White Leghorn Cockerels of highest utility breeding. Order early. Breeding from our Cockerels will increase vigor and egg yield. Jos. E. Blackshaw, M.D., San Jacinto, Calif.

First Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeye Hatchery, Turlock, Cal.

Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

For Sale—Choice Golden Buff Leghorn pullets and yearling hens. Best blooded stock. Sandridge Hatchery, Kerman, Cal.

FARM LANDS FOR SALE

Carlsbad Irrigated Farm Land—Bordering ocean; on state paved highway and Santa Fe Ry.; 80 miles south of Los Angeles; government records show Carlsbad warmest in winter, coolest in summer of any spot in Cal.; deep sandy loam, model water system; low rates; lemons mature in summer when price is highest; immense profits in fruits and berries adaptable to coast territory; winter vegetables without competition; minimum temperature 1914 was 41 degrees; tomatoes, chili, peas, beans, eggplant, rhubarb, etc., bring \$150 to \$400 per acre; easy purchase terms. South Coast Land Co., G. Buxton, Sales Agt., Carlsbad, Cal.

FARMERS WANTED

VICTORIA, AUSTRALIA, offers special inducements. Government land, water, railways, free schools, 31½ years to pay for farms adapted to alfalfa, corn, sugar beets, fruit, etc. Climate like California. Ample markets. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

School Land Now For Sale—600,000 acres to select from. Lists, particulars, SCHOOL-LAND MAP, \$2.50. Also County Section Maps, showing GOVERNMENT LAND, \$2.50, any county. Order today. "Land Reporter", now, until 1917, \$2.50. Subscribe at once. JOSEPH CLARK, Sacramento.

Apple Orchards—Large and small, in the only apple producing section in California. The greatest section west of Missouri River. Write for booklet. Geo. W. Sill & Co., Watsonville, Cal.

FOR LEASE

Fruit Ranch For Lease—High class apricot and grape ranch, located in the Imperial Valley, for rent on share basis to good man who can finance the labor needed. Produces the earliest apricots and grapes in the United States, so commands fancy prices. A high class proposition for an experienced fruit man with a little money. The American Nile Company, El Centro, Cal.

SCHOOLS AND COLLEGES

Wanted—About seventy-five young men and women to enter The WESTERN NORMAL on August 30th, to prepare for teaching. Western Normal graduates secure and hold good positions. We assist graduates to secure good positions and promotion. We save you time and money. For information, address, WESTERN NORMAL, J. R. Humphreys, Principal, Stockton, Cal., 634 E. Main St.

MISCELLANEOUS

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

For Sale—1000 feet of 8 in. irrigating pipe, fine shape, 15c, cost 27c. Ranchers' Exchange, 1630 So. Main, Los Angeles, Cal.

DUCKS

Ducks at Bargain Prices—Five breeding drakes and hens, also turkeys and chickens. Order immediately. Black Bros., 455 Lucas, Los Angeles, Cal.

Muscovy Ducks—Quackless; rapid growers, light feeders and very hardy; stock and eggs. Caldwell Bros., Box 613-R, Los Angeles.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.



"WATER-TITE"

Make that faded auto top and upholstery like new. WATER-TITE is a flexible, rubberized, waterproof dressing that will not rub off. DRIES IN 10 MINUTES. \$1.00 PER PINT. POSTPAID.

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MORGANHILL, CALIF.

"We Grow Everything Worth While"

Send for Catalogue



Stop Losing Money

If your clipper bruises an orange's skin you open the way to decay. The cut may be too small to notice—one decaying orange may spoil an entire box.

You won't bruise fruit if you use

WISS ORANGE CLIPPERS

The blades are specially curved and ground; the points and outer edges are rounded to avoid bruising.

U. S. Government experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they last longest, do best work and save money by minimizing the liability of bruising the fruit.

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Alpha Combination Power Sprayer



Fitted with the

Alpha Automatic Pressure Governor

Eliminates the trouble causing relief valve. Insures safety and absolute uniform pressure regulation. Saves in power when nozzles are not in use. Equipped with 2½-H. P. Alpha Engine that furnishes ample power for high pressure with 4 nozzles in use. Send for Catalog.

De Laval Dairy Supply Co.

San Francisco. Seattle.

Do Your Eyes Trouble You?

If So, Consult an Experienced Specialist

Eyesight is a priceless possession, yet many people neglect their eyes until too late. Perfect vision is a real blessing—every person owes it to himself to preserve it. Those who have difficulty in seeing properly should lose no time in consulting a competent eye specialist—an oculist. The danger of strain on the sensitive nerves and delicate muscles can hardly be overestimated.

Dr. C. N. Hopkins, the noted oculist, speaking of the ailments many times due to defective eyesight, says that indigestion, headaches, neuralgia, and nervous ailments are included among the long list. He further states that glasses are not always needed to eliminate these causes; skilled treatments often form an important part. He says that if the public were educated to go to a specialist for timely advice as to the care of the eyes, less than 50 per cent of the people with an incurable eye defect would be in that condition.

Dr. Hopkins, during his nineteen years of experience in Los Angeles, has successfully treated and prescribed for thousands of eye cases. The equipment of his offices in the Homer Laughlin Building, 315 South Broadway, Los Angeles, is exceptionally complete. He does not use drops in the eyes in testing for glasses.—Adv.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Trespassing Turkeys

If C owns turkeys which D kills on his alfalfa does C have cause for action or can he recover worth of turkeys, and how should he proceed? No fences are maintained and no damage whatever was done by the turkeys.—Subscriber.

The procedure would be to commence action for such damages as can be proved. If, as stated, the turkeys did no harm to the alfalfa field, without question the full amount which it can be proved the turkeys were worth can be recovered. This necessitates suit and it is possible the owner of the alfalfa might endeavor to set up counter claim for damages to his alfalfa.

Blossom End Rot

I have a field of tomatoes about one-fourth of which appear to have dry rot. The disease is confined to one part of the field. What causes it and what remedy would effect control?—Subscriber, National City.

This sounds like a case of blossom end rot, a general description and discussion of which appears in Bulletin 239, "Culture of Tomatoes in California with Special Reference to Their Diseases," by S. S. Rogers, issued by the University of California agricultural experiment station, Berkeley. This is not a fungus and it is generally believed that it is not a bacterial trouble. The only treatment recommended in this bulletin is to keep the plants growing steadily. Irrigate at regular intervals, putting on sufficient amount each time to allow the water to reach the feeding roots. Cultivate thoroughly after each irrigation.

The Best and Cheapest Way to

Control Scale and Fungus

on Citrus Trees is to spray with

Citrus Zeno

(The Standard Tree Spray)

Because

It kills the scale as thoroughly as fumigation.

It destroys the black fungus (which fumigation is not even expected to do.)

It cleans and renovates the tree. It is not a caustic material. It is easy to mix and apply. It is a proven material.

It is being used by many of the largest and most progressive growers. We operate under state license.

We can show you. And all this for one half the cost of fumigation.

Citrus Zeno sold in 50-gal. bbls. at \$14.00 per bbl., f. o. b., Los Angeles.

For summer and fall spraying dilute at the rate of 1 gal. Citrus Zeno to 30 gals. water.

Made by

Standard Chemical Company

413 E. 2nd St. Los Angeles
Main Office and Laboratory
Oakland, Cal.

Rainfall—Government Land

Where can I secure information as to location of homesteads in California, also rules for homesteading? To whom should I write to learn as to rainfall of certain counties?—Subscriber, Tulare.

Write Secretary of the Interior, Washington, D. C., for Suggestions to Homesteaders, Circular No. 224, also Classification of Public Lands, Bulletin 537, and for the Three Year Homestead Law, Bulletin 132. Write the land office of the district in which there are lands on which you wish to file. If in the district from which you write the nearest land office is at Visalia. As to rainfall, you will probably be able to get from United States Weather Bureau, San Francisco, tables showing precipitation in nearly every county of the state.

Rat Poison

Please give formula for an effective rat poison.—Subscriber, El Monte.

Bulletin 33 of the United States department of agriculture, "The Brown Rat in the United States," gives the following: "One of the cheapest and most effective poisons for rats and mice is barium carbonate. This mineral has the advantage of being without taste or smell. It has a corrosive action on the mucous lining of the stomach and is dangerous to larger animals if taken in sufficient quantity. In the small doses fed to rats and mice it would be harmless to domestic animals. Its action upon rats is slow, and if exit is possible they usually leave the premises in search of water. For this reason the poison may frequently, though not always, be used in houses without disagreeable consequences. Barium carbonate may be fed in the form of dough composed of four parts of meal or flour and one part of the mineral. A more convenient bait is ordinary oatmeal with about one-eighth of its bulk of the mineral, mixed with water into a stiff dough. A third plan is to spread the barium carbonate upon fish, toasted bread (moistened) or ordinary bread and butter. The prepared bait should be placed in rat runs, a small quantity—as a teaspoonful—at a place. If a single application of the poison fails to kill or drive away all rats from the premises, it should be repeated with a change of bait." Strychnine is also good. The dry crystals may be inserted in small pieces of raw meat, sausage, or toasted cheese, and these placed in rat runs or burrows, or oatmeal may be moistened with a strychnine syrup, and small quantities laid in the same way. Strychnine syrup may be prepared by dissolving a half ounce of strychnia sulphate in a pint of boiling water, adding a pint of thick sugar syrup and stirring thoroughly. In placing bait in runs or burrows be sure that domestic animals cannot gain access to it.

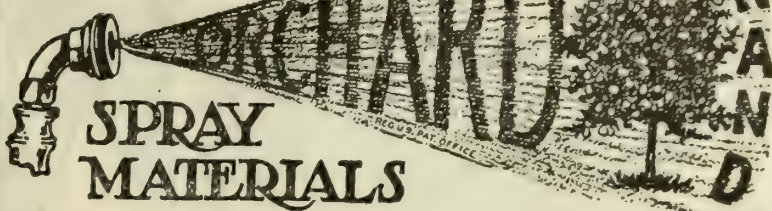
White Grubs in Ferns

I have a nice collection of ferns of different varieties but am troubled with small white worms at the roots or just under the soil. They are about the size of a pin. What can I put in the soil to kill the worms or will it be necessary to repot the ferns?—Subscriber, Porterville.

Lime water will usually drive these pests from the soil. For instance, if a pound of lime is thoroughly slaked and diluted with one and a half or two gallons of water, a cup of this added to the soil in the pots will probably destroy every one of the worms and will not prove injurious to any plant that we have ever tried it on. We do not believe it would injure ferns. Another remedy is white hellebore which is said to be an excellent remedy against nearly all root or soil maggots. Use at the rate of one ounce in a gallon of boiling water. When cool apply in sufficient quantity to saturate the soil.

Dependable Quality Means

care in manufacture—proper materials in correct proportions—years of experience—a trained organization—results.



ORCHARD BRAND Lime Sulphur Solution, Atomic Sulphur and Bordeaux Mixture, are so prepared as to avoid unnecessary labor, dependable in quality, uniform and in proper consistency.

ORCHARD BRAND Crude Oil Emulsion and Miscible Oil are especially effective for killing scale insects and aphid eggs.

Arsenate of Lead, an **ORCHARD BRAND PRODUCT** is a standard poison for killing all chewing insects.

Our information bureau is at your disposal free of charge. When writing state quantity and kind of material desired, or give the age, number and kind of trees and the pest you wish to control.

The General Chemical Co.

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Los Angeles, Cal.

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San Francisco, Cal.

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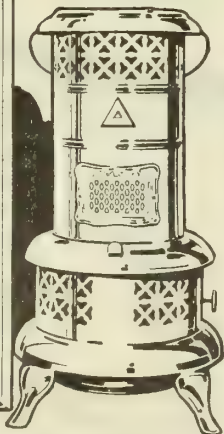
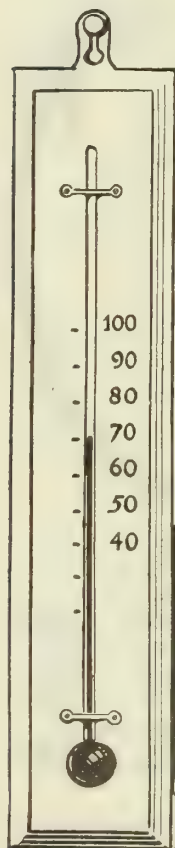
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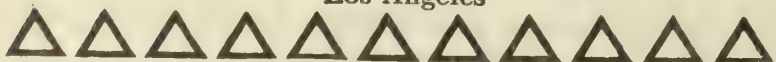


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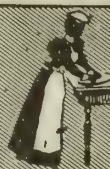
For best results
use Pearl Oil

Standard Oil Company

(California)
Los Angeles



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The Household Department



WHEN THE FROST IS ON THE PUNKIN.

When the frost is on the punkin and
the fodder's in the shock,
And you hear the kyouck and gobble
of the struttin' turkey cock,
And the clackin' of the guineas, and
the cluckin' of the hens,
And the rooster's hallylooyer as he
tiptoes on the fence;
Oh, it's then's the time a feller is
a feelin' at his best,
With the risin' sun to greet him from
a night of peaceful rest,
As he leaves the house bareheaded and
goes out to feed the stock,
When the frost is on the punkin and
the fodder's in the shock.

They's something kind o' harty like
about the atmosfere,
When the heat of summer's over and
the coolin' fall is here—
Of course we miss the flowers and the
blossoms on the trees,
And the mumble of the hummin' birds
and buzzin' of the bees;
The air is appetizin', and the land-
scape through the haze
Of a crisp and sunny morning of the
airly autumn days
Is a pictur' that no painter has the
colorin' to mock—
When the frost is on the punkin and
the fodder's in the shock.

The husky, rusty rustle of the tassels
of the corn,
And the raspin' of the tangled leaves,
as golden as the morn;
The stubble in the furries—kind o'
lonesome like, but still
A preachin' sermons to us of the barns
they grewed to fill;
The strawstack in the medder, and
the reaper in the shed;
The hosses in their stalls below—the
clover overhead—
Oh, it sets my heart a clickin' like the
tickin' of a clock,
When the frost is on the punkin and
the fodder's in the shock.

When your apples is all gathered, and
the ones a feller keeps
Is poured around the cellar floor in red
and yeller heaps,
And your cider makin's over, and your
wimmen folks is through
With their mince and apple butter,
and their sauce and sausage too;
I don't know how to tell it—but if
such a thing could be
As the angels wantin' boardin', and
they'd call around on me—
I'd want to 'commodeate 'em—all the
whole indurin' flock,
When the frost is on the punkin and
the fodder's in the shock!
—James Whitcomb Riley.

FATE

Dorinda Mills carefully muffled the
front door bell and removed the gate
from its hinges to a safe place in the
woodshed. Then she closed and fast-
ened the old-fashioned wooden shut-
ters that no mischievous boy might
construct a nerve-irritating "ticktack"
against the window pane.

"I guess those boys'll find mighty
little to play the mischief with this
Halloween," remarked Dorinda as she
complacently opened the weekly news-
paper.

Outside the little house, the October
wind blew crisply through the dead
leaves and shrilled defiantly down the
wide-mouthed chimney. Indoors the
sitting-room was snug and warm with
the cheery light from the green-shaded
lamp falling on Miss Dorinda's brown
hair and pretty blue dress.

Suddenly, out of the commonplace
paragraphs of village happenings, a
few lines sprang out as if writ in let-
ters of fire:

"Daniel Fuller of New York City
has been spending a few days with his
father at the old homestead. It is un-
derstood that Mr. Fuller will return at
Christmas and claim a bride chosen
from among Elmwood's fairest daugh-
ters.

The paper rattled to the floor while
Dorinda stared unseeing at the leaping
flames in the fireplace, where bright
pictures took shape and faded to give
place to others more sombre and
lonely.

Her first response to Dan Fuller's
tender wooing and their engagement;
the preparations for their wedding on
Halloween; their bitter quarrel a
week before the date and the broken
engagement that followed; Dan's de-
parture for the city, where he buried
his sorrow in business matters—all
these things came before her as she
sat in the lonely brown house.

Dorinda never had admitted to her-
self that she still loved Dan Fuller;
she simply ignored the fact that he
had ever existed in her life, and out-
wardly went on in her calm, unruf-
fled way, living alone in her girlhood's
home.

For the first time in 15 years she
had barricaded herself against Hal-
loween merrymakers. The recurring
anniversary of her wedding day always
jarred upon her sensibilities, but she
had fought down the desire to hide
herself behind closed doors while the
youthful countryside played pranks.

She was glad to be alone with the
newspaper paragraph about Dan Ful-
ler's marriage! Who could it be that
he had chosen from among Elmwood
girls—the fairest daughters of the
village—so the Bugle had announced?
Perhaps one of the pretty Lansing
twins—

There were guarded footsteps on the
front porch, and then the bell gave
forth a stifled peal. The boys were
at their usual mischief. Again the bell
pealed, and the steps died away from
the porch and presently crackled on
the hard gravel of the path around the
windows.

Someone rapped smartly on the
closed shutters and from a distance
came suppressed laughter. Then all
sounds ceased and silence fell upon
the house.

An hour later the bell pealed once
more and again the closed shutters
were rattled, but Dorinda did not move
from her chair.

The tall clock in the hall had
chimed the quarter hour before 12
when she at last arose and, standing
on tiptoe lifted from the wall a small,
round looking glass. She hastily blew
out the light and felt her way to the
side door and presently stood on the
porch in the pale moonlight, looking
like a ghost herself with her white
face and wide startled eyes.

"I used to do it—before I met him,"
said Dorinda to herself: "there must
be some fate for me, too! I can't go
on forever just thinking and think-
ing!"

Many Halloweens ago fate had
shown her Dan Fuller's handsome
face in the mirror beside her own and
she had turned to find his arm about
her waist. Tonight she made the cir-
cuit of the house with a heart beat-
ing as wildly as it had sixteen years
ago, and when she stood again be-
fore the side porch the moonlight re-
vealed no face save her own, pale
and quivering.

With a gesture of disgust she
tossed the mirror into the shrubbery.

"Dorinda Mills, you're the silliest lit-
tle fool! Don't you know that you've
just got to live all alone the rest of



Star Oil Gas Burner

For Cook Stove or Furnace.
Heat as intense as city gas.
Burns cheap engine distillate.
No smoke, dirt or odor.
Absolutely guaranteed. Agents
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STAR OIL GAS BURNER CO.,
Pasadena, Cal.

COOKING ON A
GAS RANGE



HOME-MADE ACETYLENE

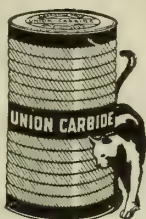
is not poisonous
to breathe

The home paper will print your obituary in the next issue—if you ever "blow out the gas" when you visit your cousin in the city. But when your city cousin comes to your country home, he can blow out your acetylene gas light and it won't hurt him a bit to breathe it all night.

Your Home-Made Acetylene gas is much the best in many other respects. A hundred cubic feet of it will give you more light for your house and barn than a thousand feet of your cousin's city gas. Your light will also be far more brilliant and beautiful, and your acetylene cooking range will have every feature of the finest gas range used by the cities' millions.

To make acetylene for country home use you require an automatic generator. You simply feed this generator the gas producing stone, *Union Carbide*, about once a month—the machine does the rest.

The use of Home-Made Acetylene has grown steadily while a hundred other



In gray drums
with blue bands

competing light propositions have died by the wayside. Today we supply *Union Carbide* to over a quarter of a million country home families.

Modern acetylene generators are wonderful improvements over the earlier kinds with which you may have been familiar. We will be very glad indeed to have you ask us any question that may come to your mind.

You will find our advertising literature intensely interesting. Address

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42nd Street Building, NEW YORK, or
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Cheer up! Get to work
in a FISH BRAND

**Reflex
Slicker**
\$3.00

Strong, easy fitting,
light, and water-
proof, absolutely.
Reflex Edges stop
water from run-
ning in at the front.

Black, Yellow or Olive-khaki.

Protector Hat, 75 cents

Satisfaction Guaranteed
A.J. TOWER CO.
BOSTON



FOR FIGHTING FIRE USE GARSTANG GRASS BURNER

For the city lot owner, or rancher. Designed solely for fighting dangerous and useless brush and weeds. Clears off city lots or vacant acreage. Kills the seed of weeds and rank vegetation at the right season. Safe, inexpensive and an efficient safeguard against accidental fires. Burns oil, distillate or gasoline. Prices on application.

Richard Garstang, Patentee, 224 W 30 St., Los Angeles



your life and sew and sew!" She broke into a little sobbing laugh and turned to enter the house.

A shadow detached itself from the tall shrubs and came across the turf. "Dorinda Mills," said the shadow in a strangely familiar voice—a voice that belonged to Dorinda's youth.

"What do you want?" asked Dorinda boldly. "Who are you?"

The shadow evolved itself into a man's tall form. He paused before her and turned his face toward the moonlight. "Daniel Fuller," he said quietly.

"O!" said Dorinda breathlessly.

"I came to see you earlier this evening—I rang the bell, but you did not answer. I came around the house and found the shutters closed. I supposed you were away and so I sat in the garden awhile—we used to sit there, Dorinda, you remember?"

Dorinda nodded her brown head.

"It is not much like the garden I remember, that was full of roses," he said musingly. "You remember that, too, Dorinda?"

"Yes," she said, slowly.

"I remember everything—everything—and because I did remember I came back tonight—I am going away tomorrow and next week I must leave on an extended Western trip—will you forgive a fool, Dorinda, and marry him and go along, too?"

"No—no—" she cried sharply, leaning against the pillar of the porch. "I can not do that!"

"Why not?" he demanded. "Then you don't care for me. Of course, after all these years you would forget," he said hopelessly.

"I have not forgotten," she retorted; "only—only you saw me running around the house with that ridiculous mirror—and you are sorry for me—and you are asking me out of pity!"

"Your eyes are the mirror of my fate, Dorinda. Look in them and you will see your own sweet face."

"And yours in mine, Dan," she whispered softly.

SOME HALLOWE'EN SUGGESTIONS

Jack-o-lanterns

Everybody, old and young, is acquainted with the jolly pumpkin jack-o-lantern family, but if you want more jack-o's than you have pumpkins, take pasteboard boxes and cut in one side faces or outlines of animals or other figures. The outline should first be traced upon the box; back of the cut-out places paste colored tissue paper; fasten a small candle in the bottom of the box with pins. It is best to use one end of the box for the bottom and fasten the lid to the box as a door. Miniature jack-o-lanterns for table decorations may be made of scooped-out apples or large cucumbers; the bell-shaped white squashes also furnish an effective oddity.

Decorating Cakes

Cookies which will grace a grown-up Halloween celebration or delight the hearts of a youngster's party are easily made as follows: Ice smoothly vanilla wafers or small homemade sugar cookies. When the icing is dry, make some melted sweet chocolate by grating the chocolate into a dry bowl and melting over a tea-kettle whose steam will keep the chocolate fluid enough to work with. With this draw with a toothpick or perfectly clean small camel's hair brush, little brownie heads, surrounded by a ring, one-fourth of an inch inside the outer edge of the cookie. Any little head that you can find in a magazine or book may be used, if you prefer—or just plain jack-o-lantern heads would be equally attractive.

The Supper

A good menu for the Halloween supper, may consist of the following: Oyster soup, cold sliced chicken, sandwiches, olives, cheese, ice cream in small paper pumpkin cups, chestnuts, bonbons, angel food cake and coffee. Fake candies may be made by covering marbles with candy fondant, for one knows the evil spirits will mix bad candy with dainty confections. Hot roasted chestnuts and peanuts may be served during the meal or afterward when the ghost stories are being told.

Choosing Partners

Something new in regard to choosing partners at a Halloween party is

Continued on Page 431



Redeem Your Karo Syrup Labels —Karo Premium Offer

SEND us labels from 50c. worth of Karo (red or blue) and 85 cents and receive this Wonderful 10½ inch Aluminum Griddle by prepaid parcels post. This griddle retails regularly at \$2.25. It cooks uniformly on entire baking surface. Needs no greasing, therefore does not smoke, is as light and bright as a new dollar, never rusts, easily kept clean, will not break and lasts a lifetime.

At great expense we are seeking to place a Karo Aluminum Griddle in the homes of all Karo users, so that Karo—the famous spread for griddle cakes and waffles—may be served on the most deliciously baked cakes that can be made.

Karo the Syrup Choice on Thousands of Farm Tables

THE woman who keeps the syrup pitcher filled knows better than anyone else how strong the men of her household are for Karo on the griddle cakes, hot biscuits, bread and waffles.

She may not know how many thousand cans of Karo are used in her home state, but she does know how often her own Karo pitcher is emptied. The forehanded housewife buys Karo by the dozen and keeps it in the pantry ready for the daily filling of the syrup pitcher.

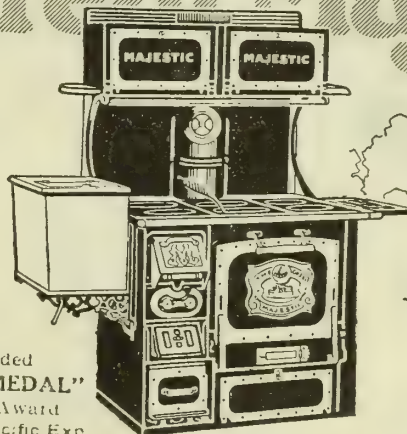
CORN PRODUCTS REFINING CO.

Dept. 109

New York

P.O. Box 161

Great Majestic



Awarded
"GOLD MEDAL"
Highest Award
Panama Pacific Exp
San Francisco

The "Thoroughbred"

It's as poor policy to keep a "scrub" range in the kitchen as to keep a "scrub" cow on the farm. Whether it be range or cow, the cost of keeping a scrub is more than that of the thoroughbred—and the results are less.

The Majestic is the thoroughbred among ranges. It takes a small "feed" of fuel and gets the utmost cooking value out of it, because it distributes the heat where it will do its best work and keeps it there—the heat can't leak out of the ever-tight, cold-riveted Majestic. With no heat wasted, less fuel is used.

The Majestic oven never fails you because its scientific construction circulates the heat evenly to all parts of oven; and its heavy

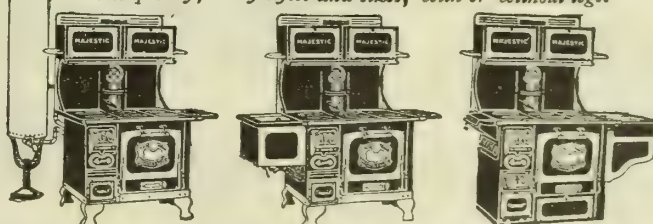
asbestos lining reflects the heat all over and under the baking; perfectly baking and browning all sides, without turning.

The Majestic body of charcoal iron resists rust three times as long as steel; and its top, doors, frames, etc., made of tough, malleable iron are unbreakable. Repair expense is reduced to practically nothing.

The little extra price of a Majestic is soon saved by its economy in fuel, food and repairs—and it outlasts three ordinary ranges.

There is a Majestic dealer in nearly every county of 42 States. If you don't know one near you, write us and we will tell you who he is.

One quality, many styles and sizes, with or without legs.



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Tells what to look for and what to avoid when buying a range. You can't judge a range by looks. You should know how they are made and why.

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OAKLEY PAINT MFG. CO.

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Los Angeles, U. S. A.



San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Oct. 27, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras26
Firsts22

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies15
Arizona Longhorn17@17½
California Fresh16
Cheddar20@21
Domestic Swiss19@20
Eastern Daisy18½
Imported Swiss40
Longhorn18½@19
Oregon Triplets16@17
Tillamook16½@17

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Fresh Ranch, case counts43
Candled45@47
Northern Fresh Extras, f. o. b. S. F.48

Prices to producers:
Hens, lb.13@17
Roosters, old9
Broilers, lb.21
Fryers15
Roosters, lb.14
Turkeys15@18
Ducks13
Geese11
Squabs, doz.100

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.7 00
Prime Steers7½@7½
Heifers6½@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

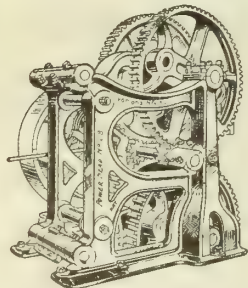
POTATOES

Wholesale selling prices:
Sweets, yellow, lug60
Idaho Rurals1.00
Idaho Russets1.40@1.45
Northern Burbanks1.25@1.60
Salinas1.60@1.75

PUMP

with a
Pomona
Deep Well
Pump

—for best results



No pump can equal the Pomona for deep lifts, as well as shallow lifts combined with high heads above the surface and through long pipe lines. For more than 12 years we have been building and selling Pomona pumps here in California and hundreds of users will attest their worth.

WRITE FOR CATALOG NO. 103 containing valuable information on irrigation. In writing please mention the depth of your well and where located.

Pomona Mfg. Co.
Pomona, Cal.

ONIONS

Wholesale selling price:
Boiling Onions, lug1.00
Pickling, lug1.25
Brown Globe, cwt.1.50
White Globe, lug85
Garlic12
Sets—
White, lb.8
Yellow, lb.7

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00@1.25
Beets, doz.30
Beans—
Wax5@5½
Limas5½@6
Green5@5½
Brussels Sprouts, lb.11@12
Cabbage, sack1.25
Northern, lb.1½@1¾
Carrots, doz.30
Cauliflower, doz.90@1.00
Celery, doz.50@75
Chicory, doz.40
Chives, doz.1.00
Corn, lug55@60
Cucumbers, lug.65@70
Pickling, lug1.00@1.50
Egg Plant, lb.3@3½
Escarole, doz.90
Horse radish, lb.17
Leeks, doz.40
Lettuce, doz.30
Mint, doz.40
Okra, lb.6@7
Onions, Green, bunch20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone7½@8
Peppers—
Bells5@5½
Chili, lb.5@5½
Pimientos, lb.6
Rhubarb—
Strawberry1.00
Spinach, doz.20
Squash—
Crockneck, box40
Hubbard, lb.1½@2
Summer, lug40@45
Tomatoes—
Lug85
Turnips40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower85@1.15
Jonathans1.75@1.90
Pearmaines, Red90@95
Spitzenberg1.35
Yellow Newtown Pippins85@90
Bananas, lb.4
Berries—
Strawberries, basket8@10
Blackberries, basket8@10
Raspberries, basket13@15
Cantaloupes—
Paul Rose, crate1.75
Casabas, crate1.75
Cranberries, bbl.9.50
Figs—
Black65@75
White65@75
Grapes—
Black Hamburg, lug75
Malagas, lug1.00
Morocco, lug1.00
Muscats, lug85
Concord, two-third crate1.10
Tokay, lug1.35
Cornichon, lug90
Red Emperor, lug1.00
Guavas, lb.6
Peaches—
Clings, box65@75
Freestones, lug.1.15
Elbertas, lb.1½@2
Pears, Bartlett, packed box2.25
Winter Nelis, lug1.00
Persimmons, lb.8@9
Pineapples, lb.6@7
Pomegranates, lug1.00
Quinces, lug50@60

CITRUS FRUIT

Wholesale selling price:
Lemons1.75@2.25
Juice Lemons1.25
Grapefruit, Seedless5.00
Limes, basket1.00
Valencias4.50@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes. 7½@9
Apricots9@16
Figs—
Loose black, box1.35
Loose white, box1.60
Calimyrna, box1.25@1.50
Peaches5@7
Pears, lb.11
Prunes, fancy pack5½@12½

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	\$13.60
No. 2	12.00	10.60
Buds	20.00	17.00
Jumbos	18.50	16.60
See almond quotations by Association under San Francisco.		
Peanuts—		
California, Raw	5@6	
Japan	5½@6	
Eastern	6½@7	
Chinese	5	
Pecans		17

HONEY

Wholesale selling price:
Comb, Fancy Water White16
Extracted Water White7½@8
White6½
Light Amber6
Beeswax25@26

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Limas5.25
Lady Washington5.75
Pinks4.65
Black Eyes4.00
Lentils20.00
Manchurian Reds4.00@4.25
Small White6.00
Garbanzos6.00

HAY

Prices to producer f. o. b. Los Angeles:
Barley14.00@15.00
Wheat Hay12.00@15.00
Tame Oat14.00@18.00
Alfalfa12.50@15.00
Volunteer6.00@8.00
Straw5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.00
Corn, White2.20
Wheat2.05@2.10
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.50
Barley Seed1.60
Barley, Hulled1.95
Kaffir1.75
Milo1.60
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal1.25
Bran, Heavy1.55
Alfalfa Molasses, per cwt.1.35
Beef Scraps3.00@3.10
Beet Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.05
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.90
Bone, Green1.75@1.85
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.55
Rolled Oats1.80
Middlings1.85
O. & W. Middlings1.80
Feed Meal2.10
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Oct. 26, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras27
Prime Firsts24½
Firsts24

CHEESE

Wholesaler to retailer:
Young America18
California Flats15½@16½
New York Cheddar19
California Cheddar16½
Oregon Twins14½
Oregon Young America, fancy14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Price to producer:
Fresh Extras48
Select Pullets39½
Hens, lb.13@16
Fryers18@20
Broilers23@28
Roosters—
Young18@20
Old8@10
Squabs2.50@3.50
Turkeys17@25
Ducks10@13
Geese11@15
Belgian Hares—
Live Weight7@9
Dressed11@12½

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@8
Hogs4@6½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7@7½

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.35@1.60
Delta Burbanks, cwt.80@1.15
Oregon1.00@1.25
Sweets1.25@1.50

ONIONS

Wholesale selling price:
Onions, cwt.85@1.00
Garlic10@11

VEGETABLES

Wholesale selling price:
Artichokes, doz.20@35
Beans—
String, lb.2@3½
Limas, lb.2@3
Wax, lb.2@2½
Celery, doz.15@25
Corn, sack50@1.25
Cucumbers, lug.35@60
Egg Plant, lug.40@65
Okra, lug40@65
Peppers—
Bell, box45@50
Chili, Mexican, lug35@50
Squash, Summer, lug.30@40
Cream50@65
Tomatoes, lug35@60

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower60@1.00
Newtown Pippins70@1.00
Rhode Island Greenings45@75
Rhode Island Greenings40@70
Jonathans60@1.00
Bananas, Hawaiian, bunch75@1.50
Blackberries, chest4.00@5.00
Cantaloupes—
Delta, lugs35@50
Turlock70@90
Casabas, crate50@75
Cranberries, Oregon, bu.8.25@9.25
Figs, box, black45@75
White30@50
Grapes—
Cornichon, crate75@85
Malagas, crate40@50
Muscat, crate50@60
Tokay, crate35@50
Wine Grapes, Zinfandel, ton. 8.00@14.00
Huckleberries, lb.5@8
Peaches, small box40@60
Pears, Bartlett2.50@2.75
Lake Co.2.35@2.50
Persimmons, box70@1.00
Pineapples, doz.1.00@1.75
Pomegranates, small boxes75@1.25
Quinces, box40@70
Raspberries, chest5.00@7.00
Strawberries, chest4.00@6.50
Watermelons, doz.75@2.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless4.50@6.00
Seedlings2.50@3.50
Lemons1.50@3.25
Lemonettes1.25@1.75
Limes, Mex., cs.4.00@4.75
Valencias3.00@3.75

DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼@4¼c. All outside sections ½c lower.
Other Fruits. Stand- Extra
50-lb. boxes ard. Choice Choice Fancy
Apricots6¼c 7¼c 8¼c 9 c
Peaches3¼c 3½c 3¾c 4¼c
Pears7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5¼c; 4-crown, 6c.
The above prices are for October, November and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.
Nonpareil 14¼c.
IXL 13c.
Ne Plus 12c.
Drake's 10½c.
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.85@4.95
Pink3.85@3.95
Black Eyes3.25@3.50
Cranberry4.50@4.75
Small White5.30@5.40
Garbanzos3.25@3.75
Large White5.25@5.35
Bayou4.80@4.90
Manchurian Speckled Bayous4.00@4.25
Red Mexican4.75@5.00
Red Kidney5.50@5.75
Horse Beans2.00@3.60

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White6½@7½
Light Amber4@5½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley10½@12½
Sonoma-Mendocino13½@15
Oregon-Washington13½@15

HAY

We quote the average wholesale price

CITRUS TREES

It doesn't
pay to take
chances

with inferior trees

Insure
your planting
by using

Teague Trees

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the world.

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of hay in carload lots on today's market
as follows:

Fancy Wheat Hay (14 bales)	17.00@18.00
No. 1 Wheat or Wheat and Oat	12.00@15.00
No. 2 Wheat or Wheat and Oat	10.00@11.50
Choice Tame Oat	14.00@15.00
Other Tame Oat	10.00@13.50
Wild Oat	8.00@10.50
Alfalfa	10.00@14.00
Stock Hay	6.00@8.00
No. 1 Barley Straw	25@40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.57 1/2 @ 1.65
Blue Stem	1.77 1/2 @ 1.82 1/2
Barley Feed	1.22 1/2 @ 1.27 1/2
Shipping and Breeding	1.27 1/2 @ 1.32 1/2
Corn, Eastern Yellow	1.60 @ 1.63
Corn, Egyptian White	1.50 @ 1.52 1/2
Oats, Red, Feed	1.27 1/2 @ 1.35
Oats, Red, Seed	1.37 1/2 @ 1.42 1/2
Oats, White, Feed	1.37 1/2 @ 1.40
Oats, Black, Feed	2.00 @ 2.25
Millet	2 1/2 @ 3
Rape	2 1/4
Flaxseed	5 @ 5 1/2
Rye	2.00 @ 2.25

FEED STUFF

Wholesale prices.	
Alfalfa Meal, car lots	16.50@17.50
Bran, ton	26.00@27.00
Feed Cornmeal	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	26.50@27.50
Middlings	30.00@32.00
Shorts	27.00@28.00
Oilcake Meal	37.50@39.00
Cocconut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, October 27, 1915.

Shipments
Shipments from Southern California
since November 1, 1914, oranges 33,143,
lemons 6767, total 39,910. To same date
last season oranges 38,766, lemons 2895,
total 41,661. From Tulare County oranges
5655, lemons 215, total 5870. To same date
last season oranges 5876, lemons 56, total
5932. From northern counties oranges
670, lemons 2. To same date last season
oranges 404, lemons 5.

IDEAS FOR HALLOWE'EN

Continued from Page 429

to have the house darkened and each
young man given a tiny candle which
he must light and then go in search
of a girl partner. The girls are to be
hidden all over the house, and since
the candles do not last long, the search
must be expeditious and interesting.

SIMPLE MENU FOR HALLOWE'EN

Nut Gingerbread Coffee
Rosy-Cheeked Apples and Nuts
Here is the recipe:

Nut Gingerbread

Sift three-quarters of a pound of
flour into a basin, add one cup of
chopped walnut meats, half a teaspoon
of salt, half a teaspoon of soda, one
teaspoon of ground ginger, one tea-
spoon of ground cinnamon and a little
grated nutmeg. Melt together in a
saucepan one cup of molasses, four
heaping tablespoons of sugar, four
tablespoons of butter and half a cup
of milk. Cool and add to the dry in-
gredients with two well-beaten eggs.
Mix well, then pour into a buttered
and floured cake tin. Bake in a mod-
erate oven three-quarters of an hour.

The gingerbread may be served
plain in the good old-fashioned way, or
it may be cut in squares, decorated
with white frosting, and a tiny candy
pumpkin placed on each portion while
the icing is still soft.

HALLOWE'EN SUPPERS

Shredded pineapple and orange
cocktails served in shells of bright red
apples. "Little pigs in blankets"—
fried oysters rolled in bacon, accom-
panied by baked potatoes, broken
open and seasoned with butter and
pepper. Green peppers, stuffed with
tomatoes and garnished with a slice
of carrot, are as pretty as they are
delicious. The salad may consist of
chopped apples and chestnuts on let-
tuce leaves. The dessert could be
only one thing—pumpkin pie. Stuffed
olives and celery for the relishes, with
toasted marshmallows to end the
feast.

Another:

Little Hot Buttered Biscuits
Jellied Chicken Fruit Salad
Doughnuts Coffee

Doughnuts

One-half cup sour cream, one-half
cup milk, two eggs, one cup sugar,
one teaspoon soda, two teaspoons
cream tartar, just enough flour to
make a dough that will roll nicely. Do
not make too stiff. Whip the egg, add
sugar and cream and beat well, then
the dry ingredients sifted together.



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Star A, Redwood Shingles, only\$1.50 M
Rough Oregon Pine, 2x3, 2x4, 2x6, etc., good, sound quality\$14 M
1x10, 1x12, \$14 M.; surfaced one side\$15 M
3/4x4" Ceiling selling at an unusual price\$12 M

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Oregon pine, 5-panel \$1.20	Heavy Double Sanded.
No. 2, 1 1/2 O. G.	Nails and Cement 90c
Doors, 4-panel .....95c	included .....sq.
Screen Doors, only \$1.35	Extra Heavy Sanded.
Windows, double	Nails and Cement 1.25
hung .....55c Up	included .....sq.
Sash, one light...40c Up	

We can also quote exceptionally low prices on all
kinds of fine Carpenters' tools, garden implements,
wheelbarrows, shovels, rope, wire, screening, hinges,
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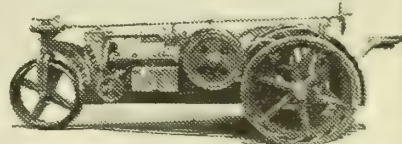
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Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

November 4, 1915

SAN FRANCISCO



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Absolutely destroys
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Killing Red Spiders
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 19

LOS ANGELES: THURSDAY, NOVEMBER 4, 1915

One Dollar Yearly

Formulas and Calendar for Fighting Pests

Losses Decreased by Use of Best Methods of Control. Fungicides and Insecticides Given in Various Formulas and Calendar Showing Treatment for Different Fruits and Crops



F the losses which are caused by the pests of this country could be saved, education, national defense, and several other of our most expensive problems would be readily solved. The insects and the fungous troubles, to say nothing of the four-footed pests, cost us hundreds of millions. In fact, we doubt not it would take ten figures to express the real loss to this country. There is generally no eradication, but there is control, and with most of the pests within economic bounds. But the best control is prevention, that is, if taken in time the insect which may become millions in a few days may be destroyed and crops saved.

In any case the handling of these pests calls for intelligent consideration on the part of every farmer and fruit grower. Know which are friends and which are foes and know in a general way at least how the pests may be controlled. The spray which is effective with a fungous disease may have no effect whatever on insects. Also in the diagnosis be sure that insects are the cause of the trouble. There is often a yellowing of the leaf or other indication of sickness which comes from poor soil, air or water conditions.

If the trouble is of a fungous nature Bordeaux mixture is the best general remedy. Methods of application are given in the following pages either under the formulas or under the calendar of different plants.

Distinguish between the fungous trouble and the bacterial disease. The fungicide has no effect whatever on the bacterial trouble. The tissues of the plant are attacked in such a way that no spray will reach it. In such cases the pruning shears—disinfected after each cut—is the only efficacious remedy.

If the trouble is caused by insects there are two kinds of control. The first is typified by the grasshopper. These are the biting insects, the eaters of fruit, leaf or stem. Poisonous insecticides should then be used. The sucking type of insects may only be reached through contact sprays which destroy the tissues of the insects or smother them by making a coating over their bodies.

For particulars see the formulas and the calendar following:

FORMULAS FOR FUNGICIDES.

1. Bordeaux Mixture

The formula ordinarily used, the 5-5-50, is entirely harmless when the plant is dormant. It may also be used on some growing plants; others it will kill or greatly injure. It may be used even stronger than the formula given when the plant is dormant, but these proportions are effective with most fungous troubles. By the 5-5-50 formula is meant:

(a) Copper sulphate 5 pounds
Stone lime 5 pounds
Water 50 gallons

The weaker solution is

(b) Copper sulphate 3 pounds
Stone lime 5 pounds
Water 50 gallons

If hydrate of lime is used add one-fourth more.

To mix, dissolve the copper sulphate with water in proportion of one pound of sulphate to sufficient water to make one gallon of solution for each pound of sulphate used. The stone lime may be slaked and dissolved in water in the same proportions as the sulphate. This gives convenient stock solutions, every gallon

of which contains one pound of lime or of sulphate. To make the mixture from these stock solutions take say, for the formula (a) above, five gallons of the lime solution which will contain five pounds of stone lime and five gallons of the sulphate solution which will contain five pounds of copper sulphate. Five gallons of each of these two solutions may now be mixed with water by pouring through a strainer into water sufficient to make 50 gallons. Do not mix the solutions before pouring into the water.

2. Bordeaux Paste

The best cure for gum disease.
Blue stone 1 pound.
Fresh burned lime 2 pounds.

Dissolve the blue stone in one gallon water, using wooden or earthen vessel, by hanging it in a sack near the top of the water; slake the lime in about one-half gallon of water. Stir together when cool, making a mixture about the consistency of whitewash. Apply with a brush. May be applied to healthy bark as a preventive. Mix fresh each day or two.

3. Flowers of Sulphur

Flowers of sulphur (use high-grade) is effective on surface mildews when dusted over the plant when leaves are moist. Sulphuric acid 1-1000 has also proven successful on rose mildew and similar fungi.

4. Copper Sulphate

Copper sulphate 1 pound
Water 15 gallons

For use on dormant trees or for disinfecting seeds copper sulphate without lime may be employed. The stock may be mixed as for Bordeaux. On growing plants it may be used with a reasonable degree of safety at the rate of one pound to 100 gallons of water.

5. Corrosive Sublimate

Corrosive sublimate 2 ounces
Water 15 gallons

Corrosive sublimate or bichloride of mercury, one of the deadliest of poisons to animal life, is a very effective disinfectant and fungicide. It is one of the best preventives of potato scab. This is one of the solutions used after pruning for antiseptic dressing of wounds of trees affected with blight. It should be made and kept in wooden or earthen vessels.

6. Formalin

Formaldehyde vapor dissolved in water in what is usually called the 40 per cent solution is one of the best fungicides and is often used in place of corrosive sublimate. It is also used for treating seed potatoes, oats and wheat. It should be employed in strength of

Formalin 1 ounce
Water 2 gallons

Sulphur sprays given under "Contact Insecticides" are also fungicides, though not with the success secured through the use of the copper solution.

CONTACT INSECTICIDES

7. Lime-Sulphur

Quicklime 33 pounds
Sulphur 66 pounds
Water 200 gallons

Sift sulphur through box with screen bottom into boiling tank with 50 gallons of water. Add the lime and boil 45 minutes to one hour. Stir

frequently. Strain through cheesecloth or burlap and dilute to make 200 gallons. If extra lime is desired strain in milk of lime when spray is ready for use.

8. Commercial Lime-Sulphur

The standard strength corresponding to the above formula is obtained when commercial solution is diluted one to 11.

9. Lime-Sulphur for Use on Foliage

Commercial material 1 gallon
Water 30 to 100 gallons

Measure the water for the spray into the spray tank and add the lime and sulphur, agitating thoroughly. The variation in strength of from 30 to 100 gallons is determined by the kind and condition of the foliage.

10. Lime-Sulphur and Flour Paste

Water 200 gallons
Flour paste, 8 8 gallons
pounds flour in water
Sublimed sulphur 10 pounds
Lime-sulphur solution 2½ gallons

The flour is first made into a thin paste by adding one pound to each gallon of water, according to the above formula. The sulphur is made into a paste also and added with the flour paste and lime-sulphur solution to the 200 gallons of water in the spray tank. This spray is excellent for the red spiders on almond and citrus trees. Minus the lime-sulphur solution it is a very effective spray for the two-spotted mite, Tetranychus telarius, on hops.

11. Self Boiled Lime-Sulphur

Flowers of sulphur 8 pounds
Lump lime 8 pounds
Cold water 50 gallons

Place the lime and sulphur together in a barrel and add just enough cold water to slake the lime, stirring constantly to prevent burning. Keep a piece of old carpet or burlap sack over the top of the barrel to retain all the heat possible. Watch the mixture carefully and as soon as an orange colored liquid starts to gather on the surface add the rest of the water. Strain through a fine sieve to remove the particles of lime, but work all the sulphur through.

Do not use hot water or allow the mixture to stand after the lime is slaked and before dilution. In this spray we do not want the soluble sulphides (orange colored) to form, for these will injure the foliage and fruit. This formula is first class for summer spraying, but may be replaced with atomic or milled sulphur with practically as good results.

12. Resin Wash

Resin 20 pounds
Lye (concentrated) 5 pounds
Fish oil 2½ gallons
Water 100 gallons

Put resin, lye and fish oil, with sufficient water to cover them well, into a large iron kettle and heat until all are well mixed and thoroughly dissolved. Add cold or hot water to make when finished 100 gallons of spraying material. This is one of the oldest sprays and very adhesive. Its great drawback is the time required for mixing and the expense.

This formula is seldom used for orchard sprays because of its expense. However, it is still used successfully by nurserymen as a dip.

13. Distillate Emulsion

Distillate (28° Baume) 20 gallons
Whale oil soap 30 pounds
Water to mix 12 gallons

Dissolve the whale oil soap in the hot water, then add the distillate and stir for a short time while it is still hot. Dilute each gallon of above to 20 gallons with water.

14. Crude Emulsion

Water 175 gallons
Liquid soap 3 gallons
Crude oil 25 gallons

Fill the spray tank with the 175 gallons of water; add the liquid soap; agitate thoroughly for one minute, after which add the crude oil, continuing the agitation. If the liquid soap cannot be had, use 20 pounds whale oil soap, dissolved in ten gallons of boiling water, to which three pounds of lye have been added.

During the spraying operation this mixture should be thoroughly agitated and great care taken to wet all of the twigs. From 8 to 15 gallons should be used on a tree. The application should be made from November to February. It should be applied in the winter, when the trees are dormant.

To also kill moss or lichens on fruit trees add two pounds of lye to the formula of the stock solution.

15. Kerosene Emulsion

Kerosene 20 gallons
Whale oil soap 5 pounds
Water 10 gallons

Dissolve the soap in hot water. Add the kerosene while the suds are still hot (be careful not to get the kerosene too close to the fire) and stir thoroughly. After thorough emulsification dilute with cold water 1 to 8.

The emulsions are more satisfactory for hand pumps or even power pumps. They are less injurious to the tree and do not need as much agitation as a tree distillate spray.

16. Distillate

Distillate 28°, refined for tree use 12 gallons
Water 200 gallons

For use only with power sprayer with good agitator which is necessary to make a mechanical mixture of the oil and water.

17. Distillate-Potash

Distillate 10 gallons
Lye or caustic soda 5 pounds
Water 200 gallons

Use only with power pump and agitator.

This is one of the best home made sprays for black scale on olives.

18. Distillate-Tobacco

Distillate 4 gallons
Black leaf 40 2 to 3 pounds
Water 200 gallons

For thrips and plant lice. To be applied by power outfit with agitator only.

19. Soap Solution

Whale oil or any good soap 1 pound
Water 6-12 gallons

20. Tobacco Extract

Black leaf 40 or nicotine sulphate 2 to 3 pounds
Water 200 gallons

21. Milled Sulphur

(a) Flowers of sulphur 20 pounds

Mermaid Spray Powder



FOR
CITRUS
AND
DECIDUOUS
FRUIT
TREES

Made
in
California

Analysis Curd Soap 50%, Bi-carbonate Soda 0.5%, Carbamate Soda 37.5%, Balance Moisture.

Soap Spray An effective soap spray used in the proportion of one part of powder to six gallons of water with 200-pound pressure. Not harmful to trees or fruit if properly used.

Eradicates Scale

Mermaid Spray Powder will kill this form of pest when applied conscientiously with the above proportions at the right time. You will also note its effectiveness towards reducing red spider while spraying for scale.

Cost A cheaper and purer soap powder that is prepared with accuracy.

Uniformity Guaranteed to be at all times uniform and without lumps and to dissolve with absolutely no waste, thus saving time and money by not having your spray machine stopped to clean out impurities.

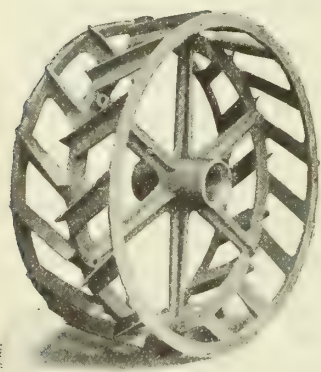
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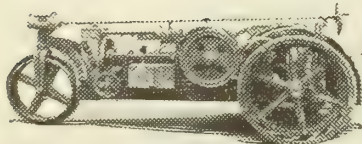
Other parts of Samson Sieve-Grip tractors are like the wheel in strength and simplicity. A Sieve-Grip can furnish economical power for your farm! Ask us how.

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Los Angeles, U. S. A.

Hydrated lime 20 pounds
Thoroughly dust over the foliage, if possible when moist with dew, sulphur mixed with hydrated lime in even parts. The lime is used to increase the adhesiveness, and this has been found fully as effective and more economical than when sulphur is used full strength. If preferred mixed with water, use:

(b) Sulphur 30 pounds
Stone lime 15 pounds
Water 200 gallons

22. Carbolic Acid Emulsion

Crude carbolic acid 5 gallons
Whale oil soap 40 pounds
Water (hot) 40 gallons

The 40 gallons of water are first poured into the cooking kettle and allowed to boil. While the water is getting hot, the whale oil soap is cut into fine pieces, so as to make it dissolve easily, and added to the water. When the soap is all dissolved in the hot water the carbolic acid is added, and all is allowed to boil for a short time to insure thorough mixing. The whole operation requires less than one hour. This makes about 43 gallons of rich stock solution. For spraying the stock solution is diluted one to 20 of water, thus making approximately 860 gallons of spraying material. The stock solution will keep indefinitely, but is preferable fresh. When diluted with water it makes a perfect emulsion and can be applied with any spray pump, since an agitator is not needed. When the stock solution is allowed to stand for some time it is best to stir it up before diluting it for spraying.

COMBINED INSECTICIDES AND FUNGICIDES

It is found desirable at times to combat both the insect pests and the fungi at one application of the spray and for this a combination of the insecticide and fungicide is used. This results in a saving in the cost of labor and time spent in spraying.

Prof. W. H. Volck, horticultural commissioner of Santa Cruz County, recommends the following especially for apple pests:

The apple is attacked by a number of pests, both fungi and insects. To combat these economically the spray mixture should contain remedies for as many pests as possible.

First spraying, to be applied just as the blossoms are falling or in full bloom, according to locality:

23. Arsenate-Sulphur

(a) Acid arsenate of lead 8 pounds
Milled or atomic sulphur 5 pounds
Dilute bordeaux mixture to make 100 gallons

Where apple scab is not a factor use water instead of bordeaux.

Second spraying: apply ten days to two weeks after the first spraying:

(b) Neutral arsenate of lead 6 pounds
Milled or atomic sulphur 3 pounds
Water 100 gallons

Third spraying. Repeat the second spraying formula in about three weeks.

If it is desired to control aphids add one to two pounds of black leaf 40 to any of the above.

24. Bordeaux-Arsenate of Lead

Neutral lead arsenate 3 pounds
Bordeaux mixture 50 gallons

Where a stronger poison is desired the arsenate of lead can be increased to three or four pounds. A more uniform distribution of the arsenate of lead is secured throughout the spray when it is added to the milk of lime instead of placing it in the spray tank.

25. Lime-Sulphur-Arsenate of Lead

(a) Neutral lead arsenate (neutral by ammonia test) 3 pounds
Dilute lime-sulphur (see 10) 50 gallons

or

(b) Arsenate of lead 2 pounds
Self boiled lime and sulphur 50 gallons

Have the arsenate of lead in the form of a smooth paste and add to the lime and sulphur solution at the same time stirring the spray thoroughly. If a power sprayer is used it is advisable to keep the agitator working.

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POISON INSECTICIDES FOR CHEWING INSECTS.

26. Lead Arsenate

Neutral lead arsenate	
(neutral by ammonia test)	3 pounds
Water	50 gallons

27. Vegetable Bait

Valuable protection of gardens and low growing plants may be had by use of a vegetable bait which grass hoppers, army worms and similar pests may prefer to the growing crop. Spray portion of alfalfa or white clover with a solution of

Paris green	1 pound
Water	150 gallons

then distributing where protection is needed, preferably at night as the bait will keep its freshness longer and also because the principal depredations of the pest are at night.

28. Bran Mash

Bran or flour	10 parts
Paris green	1 part
Molasses or glucose	2 parts

29. Citric Bran Mash

Part 1—

White arsenic or Paris green	2½ pounds
Bran	50 pounds

Mix these dry.

Part 2—

Lemons (chopped fine, including rind)	½ dozen
Syrup or molasses (cheap)	4 quarts
Water	5 gallons

Mix these together.

Mix Part 1 and Part 2 and add enough water to make a wet mash. The parts should not be mixed until ready for use. Distribute broadcast in front of the pests early in the morning.

DUSTS

30. Sulphur and Lime

Even better than sulphur alone is hydrated lime and flowers of sulphur mixed in equal parts and blown upon the trees with a power machine. In the citrus orchards this is a very important method of controlling the citrus red spider and the two-spotted mite.

31. Pyrethrum

One of the very best of insecticides, especially for household use where poisons are dangerous. Usually sold in California under name of buhach. Buy fresh and in original packages.

32. White Hellebore

White hellebore	1 pound
Water	50 gallons

Mix the hellebore with a small quantity of water and pour into the spray tank containing the required amount of water.

It may be applied as a dust spray by mixing with five to ten parts of flour or road dust, and with this dust the plants when the dew is on, either early in the morning or late in the evening. White hellebore loses its strength rapidly and should be kept in airtight receptacles.

Also effective against root maggots, especially those affecting cabbage and cauliflower. Make decoction of one ounce to one gallon of water, a cupful of which may be poured about the plants whose roots are infested. Excellent for potted plants.

33. Dry Arsenate

Experiments the past year have shown dry powdered arsenate of lead of high quality effective against corn ear worm or eating insects infesting other plants. The powder is placed in cheesecloth or coarse muslin bag and shaken over corn as it is coming into silk or over plants.

Where preferred bellows dusters may be used. Large dust machines have been used to a limited extent but under California arid conditions are not so generally used as liquid sprays.

FUMIGATION

34. Hydrocyanic Acid Gas

Fumigation is a rather complicated process for a layman to take up; it is the work of the specialist and this year has shown that to secure best results machinery should be used. The best of tents are always necessary. Cyanide of sodium has entirely re-

placed cyanide of potassium. An ounce of cyanide of sodium for each 100 cubic feet is perhaps a fair average for killing dose.

In handling this gas care must always be exercised for the chemicals are deadly poisons and the gas means death to the higher animals as well as to the insects. In fumigating buildings close all cracks before chemicals are brought together and the operator must get out of room immediately after bringing acid and cyanide together. Still better is a pulley system of lowering the cyanide into the acid after the operator has retired.

Rooms should not be entered for ten or 12 hours and then with care. Excepting where strong dosage is necessary the following will prove effective:

Sodium Cyanide:

Sodium cyanide	1 ounce
Sulphuric acid	1½ fluid ounces
Water	2 fluid ounces

The acid and water are mixed in the vessel and the cyanide dropped in at the last moment.

35. Carbon Bisulphide

Carbon bisulphide, one pint to each 1000 cubic feet of space. Place liquid in saucers or shallow vessels near top of room or over seed to be fumigated. For underground insects a tablespoonful placed in holes a few feet apart and covered tightly, works satisfactorily. For squirrels place one ounce on a piece of cotton, insert in hole and tamp tightly.

Government agents have perfected a squirrel destructor for use in applying the bisulphide. It consists of a chamber in which is a supply of bisulphide of carbon and a set of valves which enables the operator to pump the hole full of the deadly gas. Its operation is so effective and so simple that it is proving one of the most economical methods of ridding lands of squirrels. It must be borne in mind that in very dry soils the gas is dissipated so rapidly through the porosities that this treatment cannot be thoroughly effective.

MISCELLANEOUS

36. Sulphate of Iron for Weeds

Many weeds are susceptible to a spray of sulphate of iron and some, especially mustard, are so sensitive to it that spraying a grain field will often eradicate the mustard and still leave the grain growing lustily. A very strong solution is used:

Sulphate of iron	100 pounds
Water	50 gallons

Dissolve by constant agitation.

37. Torch for Dodder

Dodder, a most perplexing pest of alfalfa and other crops, may be controlled by the use of a gasoline torch burner. The kind with a chamber for compressed air and of large capacity is necessary. After cutting alfalfa, use the torch over infested spots in the field.

38. Tree Whitewash

In order to prevent sun scald whitewashing the trees or protecting by shade is at times necessary. Where a tree has been severely cut back or where a protecting limb has been broken off apply to the exposed limbs and trunk the following, known as California Tree Whitewash:

(a) Quicklime	30 pounds
Tallow	4 pounds
Salt	5 pounds
Water enough to make the mixture flow freely.	

(b) Waterproof Whitewash.

(1) Quicklime	62 pounds
Water (hot)	12 gallons
(2) Common salt	2 pounds
Sulphate of zinc	1 pound
Water (boiling)	2 gallons
(3) Skimmed milk	2 gallons

(1) Slake the lime thoroughly; (2), dissolve the salt and sulphate of zinc in the two gallons of water; pour (2) into (1) and add (3). Mix thoroughly. Two pounds of flour paste (dissolve in two gallons of hot water) may be added instead of the skimmed milk.

39. Tree Barriers

Use the commercial tree tanglefoot, or if preferred mix as follows:

Mix with a gentle heat one pound of resin and one gallon of castor oil, and when cold thin as desired with more castor oil. One of the best ways to



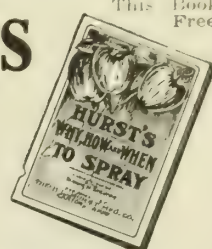
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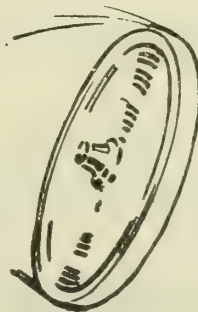
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apply it is to saturate a piece of baling rope with the well thinned mixture and tie around the trunk of the tree. This will remain sufficiently sticky about ten days, as long as anything of the kind we know of. A strip a few inches wide surrounding the tree trunk, placed in the fall and tended during the winter will prevent the ascent of the cankerworm moth. Placed in hop vines it prevents ascent of the hop flea beetle. Will bar Argentine ants or most other insects that reach the foliage by crawling only.

Cotton Bands. A four-inch strip tied around the tree by a string at the lower edge, and the top then pulled down over the string is in use against Fuller's rose beetle on the orange, and other beetles and worms.

Asphaltum. A strip six or eight inches wide painted about base of tree trunk will prevent the entrance of the peach tree borer.

40. Potato Bait

Wire worms, which have proven a great pest in some lima bean sections, have been successfully trapped by using potato bait. Before planting the beans potatoes cut in two have wire attached with small cloth or other signal and the potato is buried two or three inches under the surface. Wire worms are attracted and when bait is lifted out a day or two later it is often nearly covered with the worms. These are shaken into oil or other liquid and destroyed. The cost is said to be not over \$3.50 to \$5 per acre.

The calendar which follows gives only the number of the formula which is given in the preceding columns. That is, instead of giving particulars of sulphur-lime wash under "Aphis, Green" we say "apply 7 or 8," referring to the numbers of those formulas.

APPLES, PEARS AND QUINCES

Insect Pests

Aphis, Green (Aphis mali). Apply 7 or 8 just before buds open, if orchard has been badly infested in past years. Apply 15, 18 or 20 as soon as the insects make their first appearance.

Aphis, Leaf-Curling (Aphis sorbi). Seven or 8 plus Black Leaf 40, one pound to 100 gallons. Apply when the buds are beginning to open, pink showing in a few blossoms; spray very thoroughly.

Aphis, Woolly (Schizoneura lanigera). Spray with 15, 18 or 20 whenever this pest appears above ground. Use at least 150 pounds pressure. For underground forms proceed as follows: Remove soil until upper roots are exposed at the base of the tree. Pour several gallons of 20 around crown and replace soil when it has soaked in. Repeat often.

Bud Moth (Lithophane antennata). Use 7 in winter and 26 before leaf buds open and after blossoms fall. Repeat every ten days if necessary.

Brown Apricot Scale (Lecanium corni). Apply 13, 15 or 16 just as soon as leaves fall. Applications should be made before December 1.

Codling Moth (Carpocapsa pomonella L.). Apply 24 or 26. Continue to spray at intervals of ten days or two weeks throughout the season (at least four times).

Canker Worms, Fall Canker Worm (Anesoptryx pometaria Harris). Spring Canker Worm (Paleacrita vernata Peck). Apply 26 when worms first appear. Spray as often as needed. Tanglefoot bands on the trees are very effective in keeping the caterpillars from the trees.

Tussock Moth. Spray in full bloom with zinc arsenite, six pounds to 200 gallons, and follow in ten days with neutral lead arsenate, 15 pounds to 200 gallons.

Greedy Scale (Aspidiotus camelliae). Apply 7, 9 or 16 when trees are dormant. This scale seldom needs treatment.

Oyster Shell Scale (Lepidosaphes pomorum). Apply 7 or 9 when trees are dormant.

Pear Slug (Selandria cerasi Peck). Dust on Paris Green, hellebore or pyrethrum.

San Jose Scale (Aspidiotus perniciosus). Apply 7 or 17 when trees are dormant. If 8 is used be sure it is no weaker than given. Repeat in spring.

The Best and Cheapest Way to

Control Scale and Fungus

on Citrus Trees is to spray with

Citrus Zeno

(The Standard Tree Spray)

Because

It kills the scale as thoroughly as fumigation.

It destroys the black fungus (which fumigation is not even expected to do.)

It cleans and renovates the tree. It is not a caustic material. It is easy to mix and apply. It is a proven material.

It is being used by many of the largest and most progressive growers. We operate under state license. We can show you.

And all this for one half the cost of fumigation.

Citrus Zeno sold in 50-gal. bbls. at \$14.00 per bbl., f. o. b., Los Angeles.

For summer and fall spraying dilute at the rate of 1 gal. Citrus Zeno to 30 gals. water.

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Rex Lime and Sulphur Solution

Gives protection to your trees and vines as a fungicide as well as an insecticide and is also conceded to be the best general invigorator of any spray in use. Effective for controlling Peach Blight or for general clean-up work during the dormant season.

Rex Bordeaux Paste

—A fungicide whose efficient form of copper insures uniform results. A finely precipitated product easily incorporated into water.

Rex Spray Oils

—Include both miscible and soluble oils and distillates in any form you want for dormant spraying.

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Benicia, California

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Fungoid or Bacterial Diseases

Black Spot Canker (Myxosporium curvisporum Sacc.). Apply 1-a. the first and 15th of November.

Bitter Rot (Glomeralla ruformaculans). Apply 1-b. at first appearance of rot. Repeat every two weeks if needed.

Moss or Lichens. Apply 1-a, 7 or 17 when trees are dormant.

Pear Blight—No spray effective. The only treatment consists in cutting off blight as fast as it appears. Cut below affected parts so that good live wood is secured. Sterilize implements after each cut by dipping them in 5 or 6.

Powdery Mildew (Podosphaera oxycanthae). Apply 1-a when trees are dormant, then 1-b during spring and early summer. Remove mildewed tips in winter. Apply 7 just before buds open.

Apple Mildew. Cut off infested tips both winter and summer, also prune back all twigs somewhat as apricots are pruned. Spray with arsenites and Bordeaux combined.

Sappy Bark. Cut away diseased parts when trees are dormant.

Scab (Venturia inaequalis, Winter). Apply 1-a before buds start. Spray again with 1-b as soon as blossoms fall. Repeat several times at intervals of three or four weeks. (This should be done especially if the weather is damp.)

CITRUS FRUITS.

Insect Pests

Black Scale (Saissetia oleae) Fumigate with 34 during period between September 1 and January 1. Spray young trees with 12 or 16 during the months of September, October and November. Remove nightshade from orchard before fumigation to prevent reinfection. Fumigate also olive trees or oleanders which may be near your orchard.

Chaff Scale (Parlatoria pergandii). Fumigate with 34 at any season.

Fuller's Rose Beetle (Aramigus fulleri). This insect cannot fly and can be kept from the trees by means of tanglefoot bands.

Hemispherical Scale (Saissetia hemispherica). Same as for Black Scale.

Long Scale (Lepidosaphes gloverii). Fumigate as soon as found with 34. Repeat if living forms are found a month later.

Mealy Bugs: Long Tailed Mealy Bug (Pseudococcus longispinus); Citrus Mealy Bug (Pseudococcus citri); Fumigate as soon as found with 34 applied as follows: Give regular dose and at the end of one hour's exposure repeat the dose and expose for another hour, thus making the dose twice 34 and the entire exposure two hours.

Oleander Scale Aspidiotus hederae). Fumigate with 34. Not a serious citrus pest

Orange Aphis (Aphis gossypii glover). Spray with 15 or 20 as soon as found.

Purple Scale (Lepidosaphes beckii). Fumigate with 34 as soon as located and repeat in one month if necessary.

Red Scale (Crysomphalus aurantii). Treat same as Purple Scale.

Red Spider (Tetranychus mytilaspidis). Apply 21-b or commercial lime-sulphur when foliage is damp. Repeat until pests disappear. A new practice which has given excellent results is obtained by adding flour to the spray as follows: Four pounds flour to 100 gallons water. Make a paste of the flour, using the proportion of one pound flour to one gallon cold water, strain and add in proportion required to each tank of spray material. The advantage in using flour is that it prevents the spotting so often noted in use of lime-sulphur spray, which injures the fruit, and spreads in a thin film over the tree.

Yellow Scale (Chrysomphalus aurantii citrinus). Treat same as for Purple and Red Scale.

White Cottony Cushion Scale (Icerya purchasi, Mask.). This pest is handled perfectly by its natural enemy, Novius cardinalis, commonly called the "Vedalia," which may be had from the State Insectary, Sacramento. Release colony at any time of year scale appears.

White Fly (Aleyrodes citri). Defoliate trees when the larvae appear and scrub with 17 or 19. Better to fumigate with 34.

Thrips (Euthrips citri). Spray with 18 in spring.

Army Worms (Various species). Apply 28 under trees; also if they have not already secured access to orchard, surround trees with deep furrow, vertical side toward trees. If cover crops are growing, remove such growths as project up into branches of the trees. Paint tanglefoot bands around tree trunk. (See 39).

Fungoid and Bacterial Diseases

Brown Rot (Pythiacystis citrophthora). Sow cover crop in orchard. Plow under in spring and cultivate well under the trees. In washer use 6, bluestone, or permanganate of potash. Eliminate infected fruit and disinfect boxes and picking sacks.

Dieback (Bacterial). Improve physical conditions of trees by deeper and more thorough tilling of soil. If excessive applications of nitrogenous fertilizers have been made, discontinue until tree has resumed normal conditions.

Gum disease, formerly considered a physiological trouble, now best treated by raking away dirt from trunk of tree, scraping off all diseased bark or tissue and painting with No. 2.

Mottle Leaf (Physical). Improve physical condition of tree by deep culture. Make applications of lime and manure to soil. Examine soil as to hardpan, and if it exists, break up if possible.

Smut (Meliola camelliae, Sacc.). A fungous growth caused by honey dew

exuded by scale insects, plant lice and white fly. Remove pest and smut will disappear.

Wither Tip (Colletotrichum gloeosporioides, Penz.). Apply 1-a as soon as it appears and repeat as often as necessary.

DATES

Marlatt Scale. (Phoenicococcus marlati). Dip young plants or spray old ones with a solution of phenol.

Parlatoria Scale. (Parlatoria blanchardi). Most effective treatment burning with gasoline torch.

OLIVE

Insect Pests

Black Scale. Best treatment, fumigation with 34 October-January. If sprayed use 12, 13 or 15. Annual spraying not effective. When young insects appear in large numbers on leaves and stems apply spray. Two or three sprayings may be necessary in some years; in others none.

Twig Borer. (Polycaon confertus). Cut off twigs and prune.

Fungoid and Bacterial Diseases

Dry Rot or Fruit. Keep trees free from other pests, well pruned out so as to admit light and air.

Olive Knot. A bacterial disease in the form of a woody tumor. Attacks most vigorous trees. Distributed principally by pruning tools. After pruning dip tools in 5 or 6. Cut off all

tumors, removing the entire twig when possible, and burn.

Peacock Leaf Spot. (Cycloconium oleaginum). Fungus on leaves and fruit. Spray with No. 1.

PEACH, NECTARINE AND APRICOT

Insect Pests

Aphis, Black Peach (Aphis persicaeniger). For those above ground use 15 or 20. Destroy the underground forms by pouring carbon bisulphide into holes in the ground (made by a crowbar) six inches to six feet away from the tree and about two feet apart. Pour 20 around base of tree often.

Apricot Scale (Eulecanium armeniacum). Apply 13, 15 or 16 just as soon as the leaves fall. All applications should be made before the first of December.

Black Scale (Saissetia oleae). Same treatment as Apricot Scale.

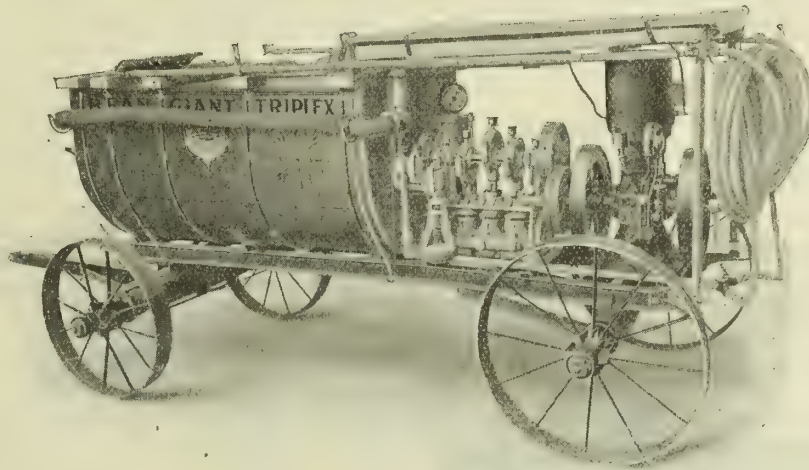
Borer, Peach Tree (Sanninoidae pacifica Riley). Dig out and kill, or destroy by inserting a flexible wire into their burrows and apply 38-b.

Bud Moth (Lithophane antennata). Use 7 during winter months when tree is dormant. Use 26 just before leaf-buds open and just after blossoms fall. Repeat every ten days if necessary.

San Jose Scale (Aspidiotus perniciosus). Spray with 7 or 17 when trees are dormant.

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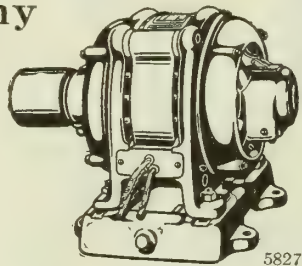
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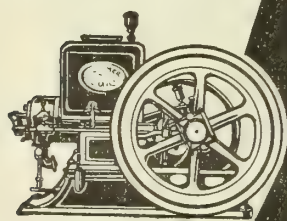
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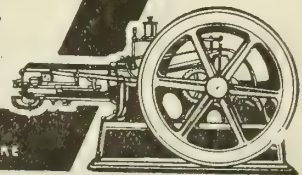
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Twig Borer (*Anarisa lineatella*). Spray with 7 or 9 just when the buds are swelling.

Fungoid and Bacterial Diseases

Blight, Peach (*Coryneum beyerinkii*). Spray last of November or before December 15 with 1-a, 7 or 8.

Curl Leaf (*Exoascus deformans*, Fuckel). Spray thoroughly with 1-a. Later sprayings should be made with 1-b.

Shot-hole Fungus (*Coryneum* sp.). Spray with 1-a about ten days before buds open and with 1-b when fruit is about one-fourth grown.

CHERRIES, PRUNES, PLUMS.

Insect Pests

Cherry Slug (*Caliroa cerasi*). Feed upon the upper surfaces of the leaves exposing the veins. Spray with 26 or dust 32 liberally upon the trees as soon as slugs appear.

Prune Aphis (*Aphis prunifolii*). Spray in the fall with 7, 8, 9 or 11 and as soon as the lice appear with 15 or 20.

Black Peach Aphis (*Aphis persicae-niger* Sm.). See same under Peach.

Peach Root-Borer (*Sanninoidea opal-escens*). See same under Peach.

Canker Worm (*Paleacrita vernata* and *Alsophila pometaria*). See under Apple.

Tent Caterpillar (*Malacosoma dis-tria*). See under Apple.

Brown Day Moth (*Pseudohazis eglanterina*). Attacks particularly the prunes and cherries. Spray with 26 or 27 as soon as larvae appear.

Red Hump (*Schizura concinna*). Spray early with 26. Burn cocoons.

Fungoid and Bacterial Diseases

Brown Rot or Fruit Mold (*Sclerotinia fructigena* Sch.). Produces a rot on the fruit. Spray with 1-a early in the spring, and with 1-b as soon as the buds begin to open.

Leaf Curl or Witches Broom (*Exo-ascus cerasi* Fuckel). Cut out and burn infested parts. Spray with 1-a early, and with 1-b as soon as the buds begin to swell.

Leaf Spot or Shot Hole Disease (*Cylindrosporium padi* Karst). Produces a shot-hole effect upon the leaves. Spray in early spring with 1-a, when the buds begin to open with 1-b, and when the fruit is one-fourth grown with 1-b.

Powdery Mildew (*Podosphaera oxy-canthae* DC.). Appears on the leaves late in the season. Spray as soon as found with 1-b and repeat if neces-sary.

Crown Gall (*Pseudomonas tumefa-ciens* Erw. Smith and Town). If on young trees recently set from nursery, remove and burn. If bearing trees, chisel away until only the healthy wood remains. Paint with 2. Watch for a reappearance and treat as before.

Gummosis. Dig out the gum pock-ets and wash out with 1-a or 2.

NUTS

Insect Pests

Aphis. In winter spray with 7 or 8. For summer spraying use 18, 19 or 20.

Greedy or Walnut Scale. Spray with 7 or 8, when trees are dormant.

Red Spider of Almonds. Spray with 9, using very weak solution, say about one gallon to 33 gallons of water. Also see Peaches.

Fungoid and Bacterial Diseases

Crown Gall. If young trees dig up and burn; if older treat with 2, chisel-ing down to healthy wood and paint with 2.

Dieback. A physical disturbance caused by unnatural soil conditions.

Walnut Blight. Sprays ineffective. The only treatment is prevention by using resistants.

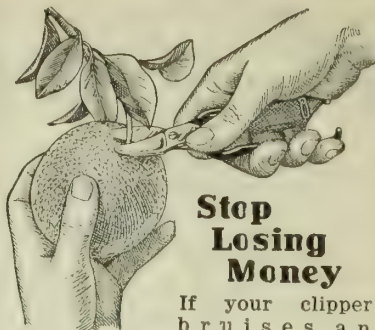
GRAPE

Insect Pests

Grape Phylloxera (*Phylloxera vast-atrx*). Attacks roots and foliage of the vines. Plant resistant stock. Be sure of your nursery stock. When pos-sible long continued flooding of fields is beneficial.

Vine Hopper (*Typhlocyba comes* Say). Infests foliage of the vines. Use hopperdozer in spring before adult females deposit their eggs. Spray as soon as the young begin to appear with 13 or 15.

Grasshoppers. (See under Beans). California Root Worm (*Adoxus ob-scurus* L.). A black beetle whose lar-vae attacks the leaves, stems, petioles,



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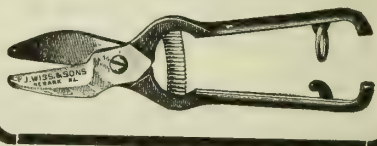
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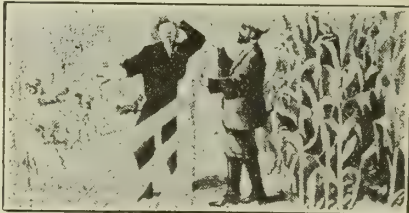
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roots and fruit of the vines. Cultivate deeply around the base of the vines. Spray with 26 as soon as beetles appear.

Flea Beetle (*Haltica carinata* Germ.). It infests the foliage and may be handled by spraying liberally with 26.

Hawk Moth (*Philaenus chemon* Drury). The large green larvae of this moth feed upon the foliage. Hand pick, or if too numerous spray with 26.

Grape Leaf Folder (*Desmia funerals* Hub.). The larvae roll themselves up in the leaves which they eat. Spray with 26.

Erinose (*Eriophyes vitis*). This so-called disease is produced by a small mite, which is characterized by forming swellings upon the upper surfaces of the leaves. Dust plants liberally with 3 when they are wet with dew.

Nematode Root Gall (*Heterodera radicola* Mull.). A minute worm attacking the small roots. Destroy all infested vines. Sterilize soil with 35. Plant only hardy varieties where this exists.

Fungoid and Bacterial Diseases

Powdery Mildew (*Uncinula spiralis* and *Uncinula necator* Schw.) Grows upon the canes, leaves and fruit. Dust often with 3 as soon as the disease appears. Spray early with 1-a.

Downy Mildew (*Peronospora viticola* DB.) Attacks all green portions of the plant—leaves, young shoots, and berries. Spray with 1-b as soon as first appearance.

BLACKBERRIES, RASPBERRIES, LOGANBERRIES, STRAWBERRIES

Insect Pests

Rose Scale (*Aulacaspis rosae* Bouche). A white scale thickly infesting the canes just above the surface of the ground. Spray with 7, 8, 12, 13 or 16.

San Jose Scale (*Aspidiotus perniciosus* Comst.) A small scale badly infesting the canes particularly of the raspberry. Spray with 7, 8 or 11.

Strawberry Plant Louse (*Myzus fragaefolii* Kell.). A light yellow louse attacking the buds, blossoms and young fruit. Spray with 15 or with 20.

Fungoid and Bacterial Diseases

Orange Rust (*Gymnoconia peckiana* Tranz.). Forms orange-red colored masses on the leaves, which finally kill the plant. Dig out and burn all diseased plants as soon as rust first appears.

Leaf Spot on Blackberry and Raspberry (*Septoria rubi* West.). Produces small pale spots on the leaves. Spray with 1-b when leaves are half-grown and repeat every two weeks if necessary.

Leaf Spot of Strawberry (*Mycosphaerella fragariae* Lind.). This disease first appears as small discolored spots upon the leaves which destroy the tissues of the plant. Spray before the flowers open with 1-b. If the disease appears late, mow off and burn the leaves. Spray the newly appearing leaves with 1-b.

Powdery Mildew of the Strawberry (*Sphaerotheca humuli*). Produces a whitish powdery covering on the foliage which soon kills the plant. Dust with 3 when the plants are wet, or spray with 5.

Crown Gall (*Pseudomonas tumefaciens* Erw.). Affects, especially, the blackberry. Dig vines as soon as this trouble appears; there is no cure. Secure new, clean stock and plant on fresh ground.

CURRENTS AND GOOSEBERRIES.

Insect Pests

San Jose Scale (*Aspidiotus perniciosus* Comst.). A small scale infesting the stalks. Spray when dormant with 7, 8 or 11.

Curant Stem Borers (*Sesia tipuliformis* and *Chrysobothris femorata*). Small white larvae which bore into the stalks of the plants. As a preventive, wash plants in the spring with 19.

Imported Curant Worm (*Nematus ventricosus* Klug.). Attacks the leaves in the spring. Dust plants with white hellebore when they are wet, or spray with 32.

Leaf Hopper (*Empoasca albopecta* Walsh). Usually appears in great numbers on the undersides of the

leaves. Spray with 15 as soon as the first ones are noticed.

Curant Leaf Louse (*Aphis ribis*). Usually works upon the ends of the tender shoots and stunts their growth. Spray with 15 or 20.

Fungoid Pests

Leaf Spot (*Septoria ribis* Desm.). Produces large pale spots with brown borders upon the leaves. Spray with 1-b as soon as first spots appear and repeat as often as is necessary to keep down the disease. Spray with 1-b twice after fruit has been removed.

Anthrachnose of Curant (*Pseudopeziza ribis* Kleb.). Produces small brown spots upon the leaves, petioles, young canes, fruit stalks and fruits. Spray with 1-a before leaves appear and with 1-b while leaves are unfolding and repeat every three weeks until fruit ripens.

Gooseberry Mildew (*Sphaerotheca morsuae* B. & C.). Produces a mildew upon the stems, leaves and particularly upon the berries, causing them to spoil. Spray with 1-b just as the buds are breaking open and repeat every 12 days until about July 1. Spray plants in winter with 7, 8 or 11.

PEAS, BEANS, VETCH, CLOVER, ALFALFA

Insect Pests

Alfalfa Weevil. Not yet in California. About the only treatment is dragging the field with brush drag. The fight is still with the California plant quarantine officers.

Wireworms (Various species). Affect beans and many other garden plants. Rotation of crops to starve out the infestations is perhaps the best treatment. Where this cannot be done, the use of carbon bisulphide in sandy ground is advised. Fertilize with nitrate of soda or kainit. Also use 40.

Bean Aphis (*Aphis rumicis* L.) Works on the leaves, young shoots and tender pods causing much damage. It is usually cared for by an internal parasite and by a predaceous ladybird, (*Scymnus sordidus*), but if it becomes too destructive spray with 15 or 20.

Green Pea Aphis (*Nectarophora destructor* Johns). Also attacks vetch, geraniums, malva, and many other plants. Spray with 15 or 20.

Cut Worms (*Peridroma saucia*, *Agrotis ypsilon*). Do great damage to all crops at certain seasons. Plow around field so as to have straight side of furrow next to the crop. Poison with 27 or 28.

Grasshoppers (Various species). Are very difficult to handle. Poisoned baits as given in 27 or 28 have given good results.

Fall plowing of breeding grounds essential.

Bean Weevil (*Acanthoscelides obtectus* Say).

Pea Weevil (*Laric pisorum* L.). Fumigate seed with 35 and be sure that no infested seed is planted. Test by placing in water; infected seeds will float.

Fungoid and Bacterial Diseases

Bean Anthracnose (*Colletotrichum lindemuthianum* B & C.). Produces brown sunken areas upon the pods. It also attacks the young plants. Treat seeds with 6 before planting. Spray with 1-b as soon as young seedlings are well under way. Repeat if necessary. Practice clean cultural methods.

Bean Blight (*Bacillus phaseoli*). Attacks pods and produces wrinkled and distorted seed. Treat seed with 6 before planting.

Rust (*Uromyces appendiculatus* Lev.). Produces rust colored spots on foliage. Spray with 1-b. Burn all infested plants.

Downy Mildew (*Phytophthora phaseoli* Thax.). Turns foliage dark and causes it to wilt and die. Select clean seed. Spray with 1-b.

Downy Mildew of Alfalfa (*Peronospora trifoliorum*). Spray with 1-b or dust with 3.

Pea Mildew (*Erysiphe polygoni* DC). Appears early and late, covering plant with a white felt-like powder. Spray with 1-b or dust with 3.

ONIONS, LEEKS, GARLICS, ETC.

Insect Pests

Onion Thrips (*Thrips tabaci* Lind.). Attack the leaves and flowers causing considerable damage in some locali-



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ties. Spray with 15 as an insecticide and with 1-b as a repellent.

Cutworms. See Beans, Peas, etc.

Fungoid Diseases

Downy Mildew (*Peronospora schlei-deniana* DB). Produces a white mould on the leaves causing them to wilt and die. Spray with 1-b.

Onion Smut (*Urocystis cepulae* Frs.). First appears in the form of dark spots upon the leaves and later as longitudinal rifts upon the bulbs. The following drilled into the soil at the rate of 150 pounds per acre has given good results: lime 50 pounds mixed with sulphur 100 pounds. Also treat seed with 6 as they are being drilled into the soil.

CABBAGE, CAULIFLOWER, KALE, TURNIP, RADISH, MUSTARD

Insect Pests

Harlequin Cabbage Bug (*Murgantia histrionica* Hahn). Attacks all cruciferous plants, cultivated and uncultivated, as well as many other hosts. It is no little difficulty to keep these insects from taking a crop, but by observing the following they may be held in check: keep weeds from the field at all times; plant late trap crops of kale or cabbage and burn them when they become infested, or kill the bugs with pure kerosene. Hand pick adult insects as soon as they first begin to appear. Spray with 15.

Cabbage Aphis (*Aphis brassicae*). Attacks a wide range of cruciferous plants, cultivated and uncultivated. In time, it is subdued by parasitic and predacious enemies, but often not until it has done great damage. It can be controlled by spraying with 15 or 20.

Cabbage Worms (Larvae of *Pieris brassicae*, the Large White Butterfly, and of *Pieris rapae*, the Small White Butterfly). These green worms do great damage by destroying, for market, great quantities of cabbage and cauliflower. The state insectary is at present propagating a very efficient parasite which destroys the chrysalid of this insect. As a repellent apply 32; as an insecticide apply 12.

Cutworms. (See under Beans, Peas, etc.)

Fungoid and Bacterial Diseases

Club Root (*Plasmodiophora brassicae* Wor.). A disease producing a peculiar enlargement of the roots giving the plants an unhealthy appearance and finally causing their death. The disease may be carried over in the soil, so the following has been recommended as a means of control: lime the soil at a rate of 100 bushels per acre, every few years. Rotate crops. Employ clean culture methods.

Black Rot (*Pseudomonas campestris* Smith). A bacterial disease first producing a burnt margin on the leaves and finally causing them to drop. The disease is readily carried from year to year in the seed. Before planting treat the seed with 5 or 6. Eliminate infected plants as soon as they appear in the beds. Rotate crops.

TOMATO, POTATO, EGG-PLANT, TOBACCO, ETC.

Insect Pests

Tomato Worms. (Are the larvae of two *Sphinx* Moths, *Plegethontius quinque-maculata* How. and *Plegethontius sexta* Joh.) These large green caterpillars feed upon the foliage and are easily recognized. Due to their large size, it is very effective to hand pick the infested area. If very numerous spray with 26.

Flee Beetle (*Epitrix parvula* Fab.). A very small beetle which works on the leaflets. As a repellent spray with 1-b; for an insecticide 26.

Twelve Spotted Cucumber Beetle (*Diabrotica soror* Lec.). A small green beetle with 12 black spots on the elytra. The larvae work on a great variety of plants. Spray with 26.

Tobacco Worms:

Cutworms. (See Beans, Peas, etc.)

Fungoid and Bacterial Diseases

Winter Blight or Downy Mildew (*Phytophthora infestans* DB.) Attacks nearly all of the plants of this family, killing the leaves and injuring the tubers. Plant clean seed. Disinfect doubtful seed with 6. Spray plants with 1-a as soon as symptoms first appear.

Root and Stem Rot (*Corticium vagum* var. *solani* Burt.). Causes a "damping-off" of seedlings. Also attacks the tubers of potatoes, the subterranean parts of the tomatoes, and the fruits touching the soil. Apply lime to aerate the soil. Rotate crops.

Dry Rot of Potatoes (*Fusarium oxysporium* Schl.). Wilt of Tomatoes (*Fusarium lycopersici* Sacch.) and Wilt of Egg-Plant (*Fusarium* sp.). All produce a wilt upon the host plants, affect the roots, and may even cause a "damping-off" of seedlings. Treat seed with 6 before planting. Keep weeds out of fields in winter. Rotate crops, so as to have clean soil each year.

Early Blight (*Macrosporium solani* E. & M.). A typical leaf-blight causing brown spots to appear on the foliage. Affects potatoes, tomatoes and daturas. Spray with 1-a when the plants are six inches high and repeat with three applications two weeks apart. Treat seed with 6 before planting. Rotate crops.

Potato Scab (*Oospora scabies* Thax.). Produces large rough blotches on the tubers. This disease cannot be dealt with while the plants are growing. Great care must be exercised in the matter of seed selection. Treat all seed of doubtful origin with 6. Rotate crops so as to keep the soil fresh.

SQUASH, PUMPKINS, CUCUMBERS, MELONS, ETC.

Insect Pests

Melon Aphis (*Aphis gossypii* Glov.). Attacks all parts of the vines and is usually accompanied by a black smut, which grows upon the honey-dew secreted by the louse. Spray with 15 or 20.

Cucumber Beetles, Striped (*Diabrotica vittata* Fab.).

Twelve-spotted (*Diabrotica soror* Lec.). The larvae and adults of these beetles destroy flowers and foliage of the plants and gnaw the rinds of the fruit. Methods of control are as follows:

Repellents—Dust with 31 or with Naphthalene. Soak lumps of gypsum in a mixture of kerosene and turpentine and place them under infested vines. Insecticides—Dust with lime and then spray with 26.

Squash Bug (*Anasa tristis* DG.). Hand pick early in the season; also pick off eggs and destroy. Eggs are deposited in clusters on the leaves when the vines are very young. Trap bugs by laying boards loosely on the ground under which they crawl for protection. If very troublesome a repellent of gypsum saturated with kerosene scattered about the grounds is effective. As soon as crop is harvested, gather and burn vines. Do not allow weeds to grow on the ground during winter months.

Fungoid and Bacterial Diseases

Downy Mildew (*Pseudoperonospora cubensis* Rost.). Disease first appears in the center of the vine and spreads outwardly. Spray with 1-b to which is added one gallon of sulphurous acid to every 100 gallons of spraying material. Repeat every ten days.

Leaf Blight (*Altenaria brassicae nigrescens* Pegl.). Produces spots on the leaves which spread very rapidly. This disease hastens ripening, injures production, and destroys the quality of the fruit. It particularly affects cantaloupes. Destroy affected plants as soon as they first appear. Spray often with 1-b. Rotate crops.

Anthraxnose (*Colletotrichum lagenarium* E. & H.). Forms circular dead spots on the leaves and long shrunken areas on the stems. The fruits of the watermelon are often badly spotted by this disease. Spray with 1-b as soon as fungus appears.

Common Wilt (*Bacillus tracheiphilus* Erw. Sm.). Produces a sudden wilt of the vines by stopping up the water-carrying vessels of the stems. Destroy infected plants as soon as infection appears.

Fusarium Wilt (*Necospora vasinfecta* var. *nivea*). Can be handled only by crop rotation.

Powdery Mildew of the Cucumber (*Erysiphe polygoni* D C.). Attacks other members of this group also. Forms a white powdery coating on the leaves and stems and soon kills the plants. Spray as soon as it first appears with 1-b.

When writing advertisers, mention The Cultivator.

CELERY, CARROTS, PARSNIPS.

Insect Pests

Celery Leaf-tyer (*Phlyctaenia ferrugalis* Hbn.). Destroys foliage, and its presence may be told by the many leaves which are curled and fastened together by this insect. It is particularly bad in greenhouses. Spray with 26 not later than three weeks before marketing crops, because of the danger of poisoning. Hand pick.

Viridescent Leaf-hopper (*Empoasca viridescens* Walsh). Use hopperdozer in large fields or spray as soon as insects first appear with 15.

Cutworms. (See Beans, Peas, etc.)

Fungoid Diseases

Celery Blight, Early Blight (*Cercospora apii* Fr.). Produces spots upon the leaves causing them to turn yellow, to wilt, and finally kills them. This disease also affects parsnips, and usually appears early in the season. Spray early and repeatedly with 1-a.

Late Blight (*Septoria petroselinii* var. *apii* B. & C.). Produces rusty brown spots upon the leaflets which may rapidly spread to cover the entire foliage. Spray with 1-a throughout the season.

ASPARAGUS

Insect Pests

Asparagus Beetle (*Crioceris asparagi* L.). Dust air slaked lime upon the plants when they are wet with dew. Apply 26 dry. As a repellent spray with 32.

Fungoid Diseases

Asparagus Rust (*Puccinia asparagi* DC.). Attacks the bushy tops, producing black and red rust, the latter being the destructive stage. Keep the plants cut back until July 1. Apply 150 to 200 pounds of 21 dry per acre. three weeks after cutting tops and before rust appears. Make the applications in the morning when the plants are wet with dew, or first spray with 1-b.

CORN, SORGHUM

Insect Pests

Corn Worm (*Heliothis armiger*). Is hard to deal with because it works on the ear in the husk. It is best handled by the rotation of crops, late plowing followed by harrowing to destroy the pupae in the soil, and by planting crop as early as possible to assure rapid growth.

Corn Root Aphis (*Aphis maidiradicis* Forbes). Attacks the roots causing a dwarfing of plants in patches over the fields. Crop rotation is the most important method of control. Stir old corn ground thoroughly before planting it again to corn.

Wireworms (See under Beans).

Fungoid Diseases

Smut (*Ustilago zeae* Ung.). Causes enormous enlargements of the kernels, producing large sacs of smut. Cut off and burn the first infestations. Treat seed with 6 before planting. Rotate crops.

Wilt of Sweet Corn (*Pseudomonas stewartii* Erw. Smith). Plants die by wilting due to the shutting off of the water supply. Select resistant stock. Treat seed with 6 before planting. Rotate crops.

Showing how buyers from great distances are seeking California live stock. G. A. Murphy of Perkins reports the sale of Berkshire boar Ruby King, son of Kennett Lee Jr. and Robins Ruby Champion sow to the Kamehameha Schools of Honolulu.

H. S. Kirks, Mahajo Farm, Perkins, Sacramento County, is getting together an exhibit of fine birds for the National Poultry Show at the San Francisco Exhibition, November 18-28. Mr. Kirk has a model plant, running 44 500-egg incubators in season.

Rucker & Coppin of Fair Oaks report sale to Ed. E. Johnson, Turlock, of Duroc boar Dreadnaught for \$225. He was first prize 18 months and under two years boar and headed first prize aged herd at Sacramento State Fair 1914.

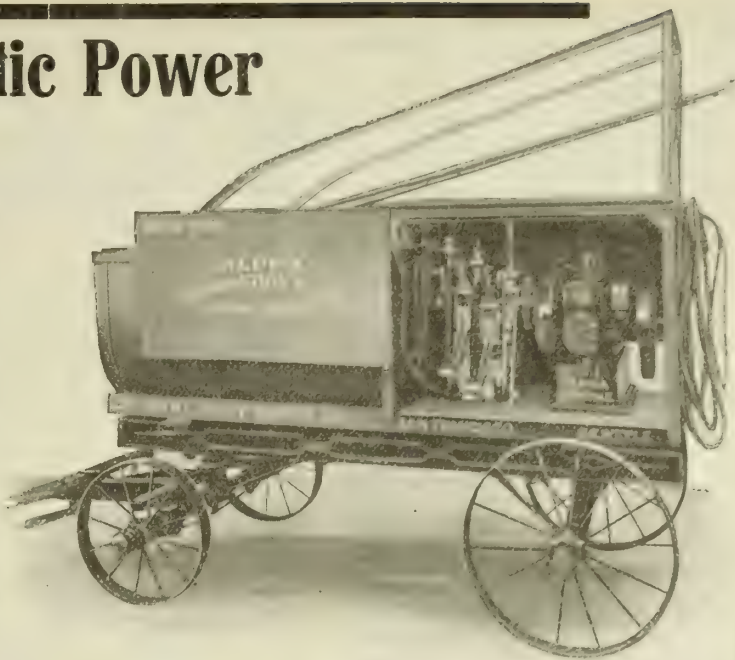
Twelve fine Berkshire hogs from the herd of G. A. Murphy, Perkins, Sacramento County, will be shown at the swine show at the Panama-Pacific Exposition and entered for sale at the swine congress sale on November 6.

The Alpha Automatic Power Spray Outfit (Patented)

Fitted with 2 in. or 2½ in. Automatic Duplex or Triplex Pump

Equipped With the New Mechanical Automatic Pressure Governor

The Automatic Pressure Governor Insures Safety, Secures Uniform Pressure and Eliminates Unnecessary Wear. No Relief or Diaphragm Valve Required. Top Guard Rails Fold Up or Can Be Quickly Removed. Gear or Belt Driven. Brass Fitted Throughout.



THE TWO ESSENTIALS in a power sprayer are a thoroughly dependable engine of ample horse power and a positive and reliable pressure regulator that will insure uniform pressure and eliminate unnecessary wear.

THE AVERAGE SPRAY RIG is equipped with a cheap engine and a make-shift pressure relief valve or diaphragm which is exposed to the corrosive action of the spray material which soon puts it out of commission.

THE ALPHA AUTOMATIC PRESSURE GOVERNOR with which the Alpha Spray Outfit is equipped is a simple arrangement of two levers and a spring on each plunger connecting rod which, when the pressure reaches a pre-determined limit, automatically discontinues the operation of the pump without interrupting the driving power, again permitting it to resume operation when the pressure falls below the point at which it has been set.

THIS INSURES SAFETY, secures uniform pressure, and eliminates unnecessary wear (no liquid pumped except it passes through the nozzles), the pressure relief is not dependent on the operation of a sluggish or defective relief valve, but is positive and mechanical, thus making it impossible to run the pressure up to the danger point.

THE POWER PLANT depending on the size rig is either a 2½ H. P. or a 3½ H. P. Alpha Engine equipped with a "built-in", gear-driven, positively timed magneto, requiring no batteries or coil, and is easily started on the magneto without cranking.

CAN YOU AFFORD to own a spray outfit that will balk? When you get ready to spray you have no time to tinker with a defective engine, pump or relief valve, but want an outfit that is capable of a continued high pressure maintenance and one that is thoroughly dependable in every particular.

THE ALPHA AUTOMATIC SPRAY OUTFIT will meet your most exacting demands. The entire frame work is made of channel and angle iron, fitted with a wrought steel bed plate on which the engine and pump are mounted, direct connected with machine-cut steel gears.

BUILT IN ALL SIZES from a 2-inch pump and a 100-gallon tank to a 2½ by 3-inch pump and a 200-gallon tank. (Either duplex or triplex.)

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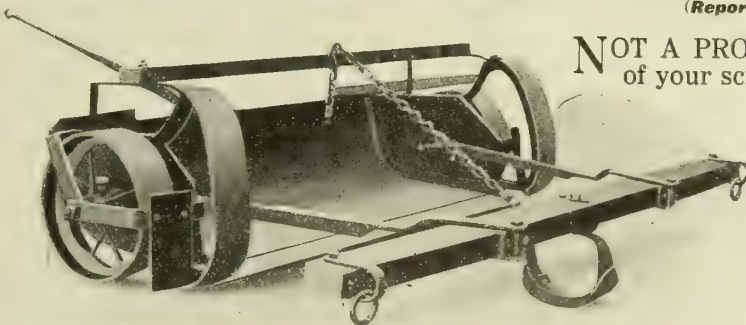
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(Report of University of California Experiment Farm)



NOT A PROBLEM, Mr. Farmer—a Solution! A solution of your scraper problem, solved by the Schmeiser Manufacturing Co., of Davis, Cal., and checked by the U. of C. Experimental Farm by actual test on Saturday, Oct. 2, 1915.

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Agriculture

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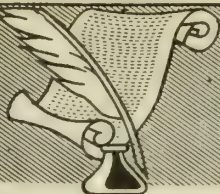
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geles, California, as Second-Class Matter.**Thursday Nov. 4, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**ACKNOWLEDGEMENT**For much help in correcting and
adding to the formulas given in this
issue we acknowledge the assistance
of Prof. E. O. Essig of the state uni-
versity and County Horticultural Com-
missioner Volck of Santa Cruz County.**HELD OVER**When we began planning for
this pest fighting number we wished
every department as complete as pos-
sible though we fully realized the
limitations and the fact that a weekly
paper of this size could not be made
a complete treatise on all the pests
and their control. However, even
then we have asked too liberally of
our contributors and the advertisers
have asked too liberally of us—the
publisher is not writing this—and in
order to maintain entire harmony
some of the very best contributions
have been held over to a later issue.We are very sorry, but honestly
they're worth waiting for.**CITRUS CANKER**We call attention to the request
of Dr. Cook that California unite with
Florida in her efforts to secure fed-
eral aid in her fight against citrus
canker. This is one of the worst pests
that has ever attacked citrus trees.
The only method of eradication is de-
struction of every tree infected. It is
scattered by the lightest wind and may
travel for miles. It is not only in
Florida but in Louisiana and Texas.
California, it is to be hoped, will
always be free from it, but our selfish
interests alone should demand that we
unite with Florida in inducing the fed-
eral department to take up the fight.
When the federal department under-
takes to eradicate a pest, it usually
eradicates it. It has eradicated the
Texas fever tick in many sections;this fight against the citrus canker is
well worthy the best intelligence of
the department of agriculture.**NOT LOST**With the indifference which
seemed to prevail over California, as
shown by one of the lightest votes
ever cast in the state, rural credits,
and every other measure proposed,
went down to defeat, with the excep-
tion of Number four which had to do
with the appointment of judges for the
short term of one month. The lack of
only 7800 votes shows that it was not
an overwhelming defeat. However,
for the present it will be impossible
to secure state legislation giving all
that is desired by those who favor a
safe and sane system of rural credits.
This simply means that the short cam-
paign of education which has been
conducted since the rural credits com-
mission visited Europe will have to be
continued. We say it will have to be
continued, for whether a better rural
credits system is secured through the
exact plan outlined by the defeated
measure or through some other plan,
a more just means of financing agri-
cultural operations must be devised. If
not, stagnation will result. Agricul-to suffocation last Wednesday to hear
reports from Messrs. G. Harold Pow-
ell, manager, and Dana C. King,
orange sales manager, as to their re-
cent trip to the six marketing centers
of the United States. The manage-
ment deemed it wise to better
acquaint the managers of these East-
ern marketing centers, and all other
agents, with California methods of
growing, and especially give informa-
tion as to the quality of our fruits.
This has been done to a degree in
former years, but this year the agents
at various trade centers were asked
to come to the division centers and
regular schools of salesmanship in
citrus fruits were instituted, the man-
agement feeling that this effort would
result in great good to the California
orange industry.Mr. Powell referred frequently to
the kindly feeling of the trade for Cal-
ifornia fruit, yet notwithstanding that,
Florida has many advantages, such as
short haul, labor at one dollar per day
from sunrise to sunset and less dan-
ger of freezing in transit. The com-
ing selling campaign will be one of
the keenest ever conducted in Califor-
nia. The most hopeful feature of next
year's business is the fact that thebut if its efficiency is enough greater,
under certain circumstances it is jus-
tified. We believe these methods will
improve and future years show great
advancement in even this effective
method. The greatest advancement
should be along the line of reduction
of cost. In this machinery will aid.**CITRUS CANKER**A most fatal fungoid malady, sup-
posed to have been introduced from
Japan, is rampant in some of the cit-
rus groves of the Gulf states, but
though very virulent when introduced,
it is as yet not widely distributed. Ex-
tirpation is now possible, but so colos-
sal an undertaking requires and de-
serves governmental aid. The State
Horticultural Society of Florida, that
state and the government have al-
ready enlisted to the extent of thou-
sands of dollars each in this work of
extermination, but more aid is re-
quired, and our government must in
the interests of wise economy come
forward most generously to assist in
this great undertaking. We should
enlist in this conflict, were we indi-
vidually unconcerned, but this is far
from true. California has been well
protected through our superb quaran-
tine and our drastic inspection of all
plants from the Gulf states and the
Orient. When so much is at stake we
must not feel safe if so serious a men-
ace is in any part of our country even
though a continent intervenes be-
tween the infected area and our own
groves. Therefore, in California's in-
terest we must exert every energy to
secure the complete eradication of this
citrus canker from the United States,
even should this require the purchase
and destruction of entire groves. The
seriousness of the situation has led
the state commissioner of horticulture
of California to urge strongly upon our
entire congressional delegation to use
its best endeavor to secure the de-
sirable and sought for legislation. He
also urges associations, exchanges,
chambers of commerce, boards of
trade and individuals of California to
act at once and strongly to secure
federal aid in the extermination of this
most dangerous fungus.—A. J. Cook,
State Commissioner of Horticulture.**THE GARDEN BEAUTIFUL**The Garden Beautiful in California,
a practical manual for all who garden,
by Ernest Brauntton, published by the
Cultivator Publishing Company, Los
Angeles, at \$1.00 postpaid.Mr. Brauntton began writing for the
ornamental garden department of the
California Cultivator some 15 years
ago and we assume our readers feel
somewhat acquainted with him and
his ideas on gardening. His whole life
work has been given to this particu-
lar line and he is fitted to give to
California gardeners just what they
want in information which fits our
local conditions. There have been
more expensive books published on
this subject but we do not think any
which give more specific instruction.
And certainly in consideration of its
price it has wonderful value. Friends
have asked the Cultivator "How can
you do it at such a price?" There are
208 pages in the book and 14 full half-
tone plates, together with many text
figures. There are 13 chapters touch-
ing upon planning the place, lawns
and soil covers, trees and shrubs,
climbers and trailers, rockeries and
feneries, annuals and perennials,
water gardens, house and porch
plants, bulbs and tubers, roses, chry-
santhemums, pests and diseases, and
perhaps best is a garden calendar
touching upon gardening operations
for each month of the year. The
glossary is of value for it explains
many of the hard-to-understand words
used in floriculture. We feel that
every subscriber of the Cultivator
should add this book to his library. It
will be sent post paid to cash in ad-
vance subscribers for \$1.75, including
a year's subscription.HILE the formulas given are thoroughly dependable and at
times of great value to many, it must be borne in mind that
many of our largest and best orchardists find satisfaction and
profit as well from using the commercially prepared articles.
The Bordeaux, lime-sulphur and other washes for instance as
now prepared are so thoroughly dependable that we feel justified in urging
their use, both on the grounds of economy and efficiency.ture in this state has suffered greatly
during the past few years, but for-
tunately the spirit of the West pre-
vails, and some step, we believe,
which will give definite relief, will be
taken in the near future.**REDUCE THE PESTS**The grower who takes delight
in the fact that he has to fight pests
because if he did not he would have
so many neighbors growing the same
fruits he does that the world could not
consume the production, has but few
who believe with him. There is a
measure of truth in what he says, but
most of us feel that Dame Nature has
been rather unkind to us in favoring
the vast hordes of animal life which
prey upon man, or at least upon the
crops which he is endeavoring to pro-
duce. It seems that every sort of
bacterium, fungus, insect and four-
footed pest stands ready to nullify our
effort. Not only that, but weather con-
ditions are against us. If it isn't hot,
it's cold; if it isn't wet, it's dry. But
since the mistake made in the Garden
of Eden it has been necessary for us
to earn our bread in the sweat of our
brow. The pests were here before we
began raising oranges and olives,
pears and persimmons and all the
other products of the earth, and we
must fit ourselves to dispute with
them the right of way. This week's
Cultivator is given over almost entire-
ly to discussing some of these pests
and methods of controlling them. It
would be foolish to attempt descrip-
tion of all or to give methods for con-
trolling all, within the scope of such
a paper, but we hope this edition will
prove of value to many a farmer, and
to that end it should be laid on a con-
venient shelf for future reference.**MARKETING**The assembly room of the board
of directors of the California Fruit
Growers' Exchange was packed almosttrademark "Sunkist" is synonymous
with the word "orange," and when the
trademark is mentioned California
oranges are at once spoken of.**FUMIGATION**The greater number of the pests
affecting agriculture may be con-
trolled, or at least their worst depre-
dations avoided by seasons of planting,
by the use of resistant stocks, by poi-
soning, spraying, dusting or fumigat-
ing. Probably the one invention which
has most benefited the fruit grower is
the spraying machine and it has
been vastly improved during the
past few years. There is scarce-
ly one of the deciduous fruit crops
but it is necessary to bring to
their help sprays and modern spray
machinery. It is only a very few years
since the most efficient spray pump
was run by man power. If man power
only were available today in spraying
operations there would be a great im-
petus given to the labor market. But
the little gasoline engine is working
wonders and reducing the cost of the
work. There are occasions, however,
where the most improved spraying
machinery is, if not ineffective, at
least not so efficient in its operation
as the gas tent. With the citrus tree
always in foliage, likewise the olive
and many others, it is almost impos-
sible for sprays to reach all parts of
the tree.A third of a century ago orange
growers began to dream of a more
effective method. It had to come or
the orange industry would languish. It
came in the form of hydrocyanic acid
gas treatment. There were trees
killed; there was poor work done; but
ultimately a very satisfactory method
was developed. Only the last two
years has seen great improvement in
this modern method of insect control
and the exactness of machinery is now
entering as the big factor. It is neces-
sarily more expensive than spraying,

Agricultural News Notes



of the Pacific Coast

Northern California

Marysville's week of rice carnival came to a successful close Saturday night.

Palermo, Butte County, shipped two carloads of oranges to New Zealand on October 14.

Leonard Prisk has been declared the champion potato grower of the Grass Valley high school agricultural club.

Ducks are reported as doing thousands of dollars of damage to rice crops in the Colusa section of Glenn County.

W. L. Hobbs of Yreka, Siskiyou County, has sold a 1000-acre dairy and stock ranch near Edgewood to Alves and Santos.

Butte County olive growers are ready for the harvesting season. Picking will commence early in November. The yield is estimated at normal.

Experiments carried on by Prof. Gordon H. True of the state agricultural college have determined that almond hulls have practically no feeding value for sheep and swine. The gains heretofore reported on swine fed on almond hulls are therefore concluded to be really due to meats left in the hulls as usually fed.

Central California

Harvesting has begun in the rice fields at Kerman.

The Visalia canneries are sending out two carloads of canned fruit daily to the Eastern market.

The Tagus Ranch, north of Tulare, secured 38 head of pure bred Holsteins at the recent Holstein sale at Hanford.

A number of raisin growers of Kingsburg, Fresno County, have signed up with the Associated Raisin Company.

The Tulare Cooperative Poultry Association reports a substantial gain in business during September, 1915, over September, 1914.

Salinas sent eight boy contestants in its bean growing contest to the agricultural club convention at the Davis university farm.

The Mountain View branch of the Stanislaus County farm bureau held a general social and get-together meeting the night of October 16.

The Tulare Cooperative Poultry Association is talking of holding a show sometime in December or January. Local poultrymen are evincing considerable interest in the proposed show.

Southern California

Several different plans are being discussed for an organization of bean men of Southern California.

The Almond Growers' Association of Banning has shipped out over 100 tons of nuts, with about 75 tons yet to go.

The San Bernardino County Poultry Association has been organized. F. H. Bean of Colton has been made secretary.

Serious fires have been burning in the San Timoteo and Live Oak canyons in San Bernardino County. Much grain land was also burned over.

"The Proof of the Pudding" is the title of a booklet being issued by the Sixth National Orange Show, containing expressions of appreciation by exhibitors and business men of the benefits of the 1915 show.

Ranchers of Hesperia in San Bernardino County requested permission of the county supervisors to establish a pound district in which straying stock could be confined, but the district attorney's office has decided that as all the cattle are branded, and therefore the owners known, there are practically no "estrays" in the meaning of the law.

The Coast

Dona Ana County, New Mexico, has a newly appointed farm adviser.

Gilbert, Yavapai County, Arizona, is assured of a new \$15,000 alfalfa mill.

Arizona poultrymen are planning for a big show at Tucson December 18-20.

The state of New Mexico recently sold over 80,000 acres of grazing land to cattlemen.

The Arizona Cattle Growers' Association will hold its annual convention at Prescott, January 15-17.

The premium list is now being mailed for the annual Pima Indian Fair, to be held at Sacaton, Arizona, November 3-5.

The annual show of the Arizona State Poultry Association will be held at Tucson, December 16, 17, 18. The secretary is B. F. White, Tucson.

A rancher in the Artesia district of New Mexico catches grasshoppers in a hopperdozer, dries them in the sun, and saves them for winter feed for his chickens.

The board of directors of the Wenatchee, Washington, reclamation district has organized and elected officers and is now preparing estimates for improvement work.

Pear Blight Treatment

Written for California Cultivator by Percy L. Gammon, Giving Methods as Practiced in Sacramento County



HE time is at hand when your pear blight can be most successfully eradicated. To do this work a trained man is absolutely essential. If none are available, send a young, energetic and methodical employe, one who has your interest at heart, for a week's training with some authority on blight. A month would be better.

Supply him with the proper tools and see that he is unhurried and unharrassed by your own interference into the efficacy of, for instance cutting this tree down or cutting so much away from that tree. He must be, however, versed in the right way of making good clean workman-like cuts, being careful not to leave snags or stumps. The success of your treatment depends solely upon the knowledge and personality of your blight cutter. Half way methods are worse than useless, and a careless, slovenly worker may do much more harm than good.

Just before the leaves fall and before the first frost is the time to inspect the foliage for a reddish color which indicates either diseased or injured areas in the limbs, trunks, or roots. Mark these as suspicious characters, as they may or may not be caused from blight, but in many cases are the surface indications. These should receive especial attention.

When you look the trees over also cut out with a long handled pruning hook all traces of twig blight.

As soon as the trees become dormant start your large limb, trunk, crown and crown union inspection. This inspection is carried on by gouging at least every four inches, being

careful to disinfect your tool and your cut surface after every cut. Every pear tree in your orchard should be gone over in this manner.

The disinfectant best suited for this purpose is bichloride of mercury, 1-500 solution. Get the tablets in thousand lots from any druggist. Carry the solution in a two gallon composition bucket. Metal or wooden buckets neutralize the disinfectant. Apply with sponges and use at every cut and every opportunity.

Cut away all diseased portions where found, scrape all diseased surfaces with a scraper and keep edges perpendicular so as to promote as much as possible the growth of healing tissue. Disinfect every cut. The tools necessary to this work are as follows: One three-quarter inch gouge, one half inch gouge, one one inch gouge, one one inch chisel, one three-quarter inch chisel, two large scrapers, one small scraper, one shovel, one hand axe, one large axe, one pair two-handed pruning shears, one long handled pruning hook, saw, bucket and sponges.

To prevent decay paint four times a year with white lead and linseed oil. The spring and summer treatment is more generally understood, so I will not dwell on it here. I will, however, give one warning: Keep your suckers down throughout the entire year. If you cannot do this and keep your blight down with one man, keep more, and keep them all the time. That is the only way in which you may fully succeed. Half way measures are futile.

tention was first called to the probable need of regular spraying against this fungous enemy. Soon after Dr. Woods had made this observation California received a visit from Professor P. H. Rolphs, director of the Florida agricultural experiment station, who had first investigated wither-tip fungus in the citrus orchards of Florida in the early nineties and since that time had had continuous practical experience in its control by artificial means. Spraying with Bordeaux mixture had been found by Florida growers the most effective measure against it. This was the remedy and preventive advised by Professor Rolphs.

Doubtless most citrus growers know that Bordeaux mixture is a spray made of copper sulphate, commonly termed "bluestone", good dry barrel lime and water, the traditional standard mixture containing six pounds copper sulphate, six pounds lime and 50 gallons water.

For citrus spraying Professor Rolphs recommended as sufficient, instead of the 6 6-50 formula given above, a 4 4-50 or 3 3-50 mixture. The acreage sprayed for wither-tip control in 1909 and even up to the present time has been confined quite largely to lemon acreage in the near-coast regions where the more humid atmosphere furnishes more favorable conditions for fungus growth. The writer's experience has been exclusively with lemons.

In comparison with both home made and commercial lime-sulphur sprays, and with an ammoniacal solution of copper carbonate, the 4 4-50 Bordeaux proved more effective in preventing the characteristic wither-tip spotting of the lemons. To be most effective, however, all of these sprays, as experience has shown, must be applied as late as possible in the fall, but in advance of the principal rainy season. October and November are probably the best months, one year with another.

The subsequent discovery that trees and fruit sprayed with Bordeaux were extremely sensitive to the burning action of hydrocyanic acid gas, so widely and frequently used for fumigation, made the use of this spray extremely hazardous. The growing necessity for control measures against the red spider called for a sulphur spray. Though generally considered somewhat inferior to Bordeaux the sulphur sprays have been widely used for many years in the summer spraying of deciduous orchards for fungus control. Experiments demonstrated that fumigation could follow safely within

a few days, or weeks at the most, a thorough spraying with the lime-sulphur solutions. Consequently, serving a double purpose as it does, the lime-sulphur has almost entirely displaced the Bordeaux as a remedy against wither-tip.

But the Bordeaux still has its place in the lemon orchard, leading all known fungicides in the fight against the common "brown-rot" decay of the fruit and the "brown-rot" gummosis of the tree trunk. In 1912 Professor H. S. Fawcett, then pathologist for the state commission of horticulture, made that most valuable discovery that practically all of the gum disease of the lemon tree is caused by the brown-rot fungus. For this he suggested the use of Bordeaux paste on the trunks affected, applying it with a brush after cutting out the diseased areas, and also as a preventive on trees not already infected, but apparently in danger of infection. The usual formula for this paste is as follows: One pound copper sulphate, two pounds lime, one and one-half to two gallons water.

Coincident with this discovery came the idea of spraying with Bordeaux the trunks of the trees, the ground beneath them, and the low-hanging boughs, so that every part of the tree within two feet of the ground might be as nearly as possible immune against brown-rot infection. While apparently commercially controlling the wither-tip yet the lime-sulphur sprays have conspicuously failed to hold in check the brown-rot in the orchard and prevent the infection of fruit hanging on the tree near the ground or in contact with it. For this purpose the Bordeaux is indispensable. Such spraying, however, should never be done until just after a fumigation or a year ahead of one, so that as long a time as possible may elapse before another fumigation. Thus far experience seems to show that if a full rainy season follows this ground spraying there is small likelihood of its seriously affecting the trees when fumigated the following summer or fall.

As the citrus orchards advance in age, shading more and more of the soil, keeping it wet in winter and preventing the growth of vegetation, it seems quite likely that brown-rot will become more and more destructive of both trees and fruit, unless preventive measures are carefully practiced. Bordeaux spray, used only on the ground and lower two feet of the tree, and the Bordeaux paste are the surest and safest preventives known and proven at the present time.

Fungicides at Limoniera

By Jas. D. Culbertson, Assistant Manager Limoniera



N California the year 1909 marked the real beginning of commercial spraying of citrus orchards for fungus control. A little desultory and experimental work had been done

previously, but it was following the discovery and identification of the "wither-tip" fungus by Dr. A. F. Woods, then of the United States department of agriculture, in the spring of 1909, that the citrus grower's at-



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Sanitary Barn

Cleanliness as a Preventive of Disease. Methods of Treating Some of the More Common Pests Affecting Stock.



TOO many barns are maintained in unsanitary condition. This may be partly the fault of construction, but it is more generally the fault of the farmer. The health of live stock depends upon right conditions to almost as great an extent as does the health of the family upon ventilation and proper sanitation in the house. We have visited barns which were so strong with the fumes of ammonia when the doors were opened in the morning that it seemed strange the eyes of the stock were not blinded. Of course such a condition is the result of negligence in the continual piling up of manure which has partially decayed and set up formation of ammonia. Such conditions should be corrected by cleanliness and the use of disinfectants or absorbents. The farmer who is saving his stable manure—and he is a poor one if he is not—may well afford to purchase rock phosphate, gypsum or some other absorbent which not only gives his stock more healthful surroundings, but furnishes for his trees the richest of fertility.

Again, many permit the infestation of live stock with mites or vermin of various kinds. This is even more deplorable than the unsanitary condition mentioned, for even the best of dairy cows cannot fill the milk pail and feed blood-thirsty insects all over the body. Still worse, these insects often carry disease from one animal to another. Eliminate dust, use the spray pump freely, apply kerosene emulsion and whitewash all the interior of the stables. If in addition there are cement floors with gutters the live stock should be kept in excellent condition.

Of course most important of all is the keeping down of the pest of flies, for the sake of humans as well as stock. Take all manure directly to the orchard or field and if possible plow under. Where necessary to store keep in fly-proof bins or boxes. As a repellent use a mixture of fish oil one gallon, oil of pine tar two ounces, oil of pennyroyal two ounces, kerosene one-half pint. Apply as a spray to the animals.

Ox Warble

For partial control of this pest the legs of the animals may be kept treated with the fly repellent given above. Be sure and squeeze all grubs from the backs of the animals in midwinter. Some prefer the injection of kerosene, carbolic acid or turpentine through the small opening in the back.

Texas Fever Tick

To control the Texas fever tick the usual dipping methods are resorted to. Arsenical dips have been found most efficient. For a vat holding 1500 gallons, use 74 pounds sal soda, 24 pounds white arsenic (99 per cent arsenic trioxide), and three gallons pine tar. The reader is referred to Circular 183, bureau of animal industry, department of agriculture, Washington, for specific directions, or apply directly to the state veterinarian for assistance.

Swine Parasites

Creolin dips at from three to four per cent are strongly recommended. Repeat in ten days.

Lime sulphur dips are especially recommended, i.e., in the proportion of eight pounds of lime and 24 pounds of sulphur to every 100 gallons of soft water. The dip must be used warm, and in severe cases should be rubbed in thoroughly by hand.

Sheep Dip

The two principal dips used against scab are tobacco and lime and sulphur. It has been found by careful experimentation at the Kentucky agricultural experiment station that there is no advantage in adding sulphur to tobacco dips. The per cent of nicotine in the dip should be from 0.05 per cent to 0.07 per cent. The proportion of the ingredients used in the lime-and-sulphur dips varies somewhat according to the severity of the disease, i.e., flowers of sulphur 24 to 33 pounds, unslaked lime from eight to 11 pounds to 100 gallons of water.

Lice

Lice are as a rule quite easily killed by an application of a two per cent to three per cent solution of creolin or other standard proprietary remedy used as directed.

Four-Footed Pests

Coyotes, Gophers, Rabbits and Other Pests Almost Innumerable Contend With the Farmer for Every Crop. Methods of Control. Written for California Cultivator.



THE greatest loss to California farmers from depredations of four-footed pests comes from the common California ground squirrel. It is estimated that it costs the state yearly millions of dollars. There is a state law which makes it a misdemeanor to harbor these pests; it should be enforced more rigidly.

The best remedy is carbon bisulphide used in an instrument called the squirrel destructor. This was patented by officials of the United States department of agriculture and the patent dedicated to the use of the public. It consists of a receptacle holding the fluid, with a measuring device which the operator can set so as to give proper amount for every hole. The tube is conducted into the hole, the gas injected and the hole instantly stopped up. Twice over the field eradicates practically 100 per cent. The best season for work is after the rains have soaked the soil so as to hold the gas.

The best poison is probably that recommended by the hospital marine service which has made a campaign to eradicate this pest in the counties

about San Francisco Bay—this because it was found that some of the squirrels were infested with ticks carrying the germ of the bubonic plague.

Government Formula for Poisoned Grain for Squirrels

This formula is said to be 85 to 90 per cent efficient if applied four or five times at ten-day intervals during the season.

Whole barley (recleaned).....18 pounds
Strychnine sulphate.....1 ounce
Soda (bicarbonate).....1 ounce
Saccharine.....1 dram
Thin starch paste (laundry starch).....1 pint
Corn syrup (Karo or equal) 2 ounces

Dissolve the strychnine in hot water; thicken with starch to about the consistency of soup. Dissolve the soda in one-half pint of hot water and add a little at a time to the poisoned starch until effervescence stops, then add the syrup and saccharine, mix well and apply to the grain, stirring constantly until the poison is evenly distributed throughout.

Remember strychnine is a deadly

Continued on Page 453

CALIFORNIA AND THE JERSEYS

Editorial Correspondence

"California should be a Jersey paradise." This is a statement made during the Panama-Pacific International Exposition Cattle Show by no less an authority than the capable and energetic president of the American Jersey Cattle Club.

It is a statement that means much to the live stock industry of the state. Progress and extension are watch words in the "Jersey Camp" now.

For years the American Jersey Cattle Club has been controlled by conservative, wealthy breeders who have, to say the least, had less interest in the popularizing of the breed than have those in control of some of our other breed societies. The value of the Jersey as a capable, honest producer of dairy products on the farms of hundreds and thousands of dairy farmers in moderate circumstances has not been given the attention and publicity that has been given similar facts about other breeds.

Now those who are most interested in the progress of the breed believe that an increase in the number of breeders among the dairymen all over the country and their enrollment as members of the club warrants the effort necessary to bring about this result.

We produce wonderful Jersey cattle in California. We have a combination of peculiarly favorable feed and climatic conditions that makes it possible to grow animals of great vigor and vitality, profitable dairy animals that will make big money for their owners.

And if the American Jersey Cattle Club decides to conduct a campaign to further popularize the Jersey in California great results should attend the effort.

CALIFORNIA CREAMERY OPERATORS

Written for California Cultivator

The State Creamery Operators' Association closed what every attendant stated was by far the most successful convention yet held in California last Saturday night at a banquet held at Inside Inn, Exposition grounds, San Francisco. The attendance was large and an excellent spirit prevailed at every session. The program which was given in a former Cultivator was followed to the letter, which was a satisfaction to those who came for certain features at a certain time.

One of the pleasant features of the banquet was the presenting to butter scoring contest winners the various special prizes won. Details of the contest and list of winners will be given in the next Cultivator.

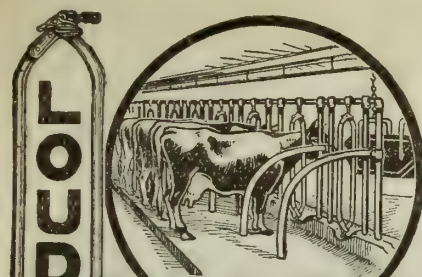
There was discussion as to law enforcement and methods of securing more hearty cooperation between inspectors, dairymen and creamerymen.

The state dairy bureau is unable to employ sufficient inspectors to cover the state more than once a year, so that in some sections the dairymen become lax as to cleanliness and as to condition of cream delivered. Tulare County has an inspector under county employment and he is securing cooperation on the part of most dairymen and creamerymen.

Many valuable suggestions were made by Mr. John Sollie, one of the judges of the butter scoring contest. He was not agreed with entirely in one point—that the maximum acidity of cream at time of churning should not exceed .35 per cent. Many creamerymen felt that the flavor of butter from such cream would not be received by the trade as well as from a cream testing at least a half of one per cent.

The next annual meeting will be held at Ferndale, and a movement was started at the banquet to make it a great meeting. Many hearty commendations were given to retiring President W. H. Roussel and his committee and to Secretary Davis for the plans for the most successful convention.

Officers for the new year are president, H. F. Harbers of the convention town, Ferndale; vice president, W. P. Hopkins, Petaluma; secretary, Prof. Leon M. Davis of University Farm, Davis; executive committee, C. E. Gray, T. J. Harris and H. S. Baird.



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My Stock Tonic also aids digestion and assimilation, makes your hogs and other stock thrive; it is the result of knowledge which I have acquired as a veterinarian, doctor of medicine and stock raiser. Formula on every package.

So sure am I that Dr. Hess Stock Tonic will keep your stock healthy and expel worms, that I have authorized my dealer in your town to supply you with enough Tonic for all your stock and, if it does not do all I claim, just return the empty packages and get your money back.

25-lb. pail, \$2.25; 100-lb. sack, \$7.00, smaller packages as low as 50c. Send for my free book that tells all about Dr. Hess Stock Tonic.

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Dr. Hess Poultry Pan-a-cé-a

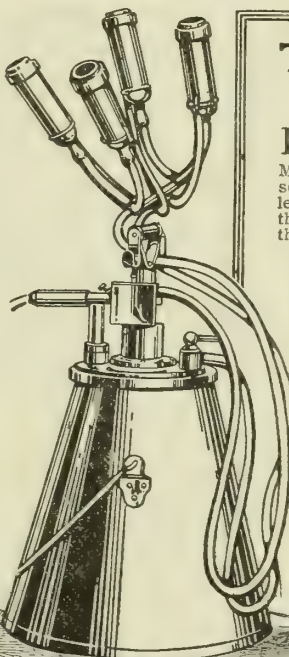
A splendid tonic during the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also starts the pullets to laying. Economical to use—a penny's worth is enough for 30 fowl per day. 14 lbs. 25c; 3 lbs. 50c; 7 lbs. \$1.00; 25-lb. pail, \$3.00. Guaranteed.

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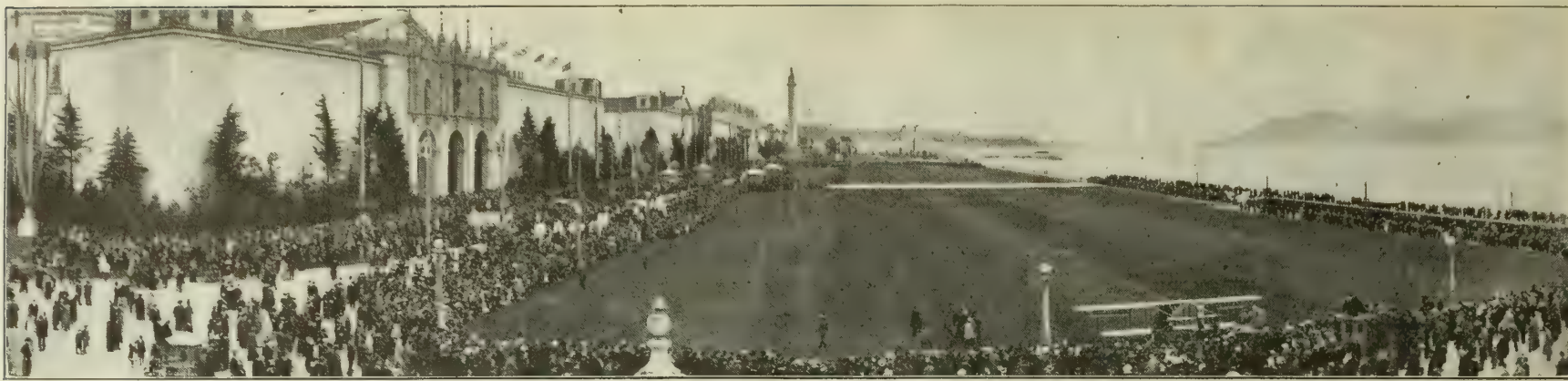
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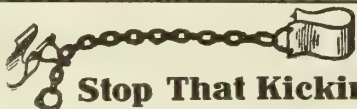
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Thoroughbred Poland China Swine
High Grade Stock of Best Strains
Young Stock For Sale

M BASSETT

Hanford, Cal.

O.I.C. Swine Breeders' Association,
November 10.

SHEEP AND GOATS AT THE EXPOSITION

California is a great sheep state but
it is not apparent from the entries at
the exposition this week for nearly all
the entries are made from outside the
state. Great attention is attracted
by a fine exhibit of Romneys from
New Zealand. The Rambouilletts top
the list as to numbers with 209. Other
breeds number: Hampshire, 57; Cotswold, 59; Oxford, 12; Dorset, 14; Southdown, 21; Romney Marsh, 33; Corriedales, 62; Persian Fattails, two groups; Karakules, one group.

Goats

Angora goats, 87; Toggenberg milch
goats, 23.

GREATEST EXHIBIT OF BERK- SHIRES

Berkshire swine outclass everything
at the swine exhibit now being made
at the exposition. It is pronounced
the finest and biggest exhibit of Berk-
shires ever made. There are 294 single
entries besides many groups;
other swine classes are generally
large. They number as follows—all
figures are as to single entries. In
each there are group exhibits as well:
Poland Chinas, 143; Duroc Jerseys,
106; O. I. C., 13; Hampshires, 93;
large Yorksires, 14; Essex, no single
entry but several groups.

At this writing, Monday, all stock
not placed but sufficient are in pens
to indicate a great show.

RED POLLED PRIZE WINNERS

In last week's leader article, "Pana-
ma-Pacific Cattle Show Winners",
mention of Red Polled cattle was by
error placed under "Holsteins". This
paragraph should have appeared
under "Red Polled Cattle" on the first
page of the article on which was
shown photograph of prize winning
Red Polled cow exhibited by Mr. Cart-
wright: "R. R. Cartwright of Angels
Camp had a popular prize winner in
the beautiful cow that is illustrated
and won many other prizes. His cat-
tle were not as highly fitted as were
those of the F. H. Porter herd from
Halsey, Oregon, who had many at the
head of the list."

SEE THE MOVIES

One of the most educational fea-
tures of the exposition is given by the
use of moving pictures. Many manu-
facturers show the processes of their
factories, the government is using
them in explaining mining and other
operations, and at almost every turn
there is an opportunity to rest and
be instructed. In this respect the ex-
hibits are very educational, for the
movies are worthy of something better
than cowboy stunts. As one has ex-
pressed it, "If one sees nothing else
at the exposition but the movies he
has gained a fair insight into what the
world is doing."

CONVENTIONS AT P. P. I. E.

American Hampshire Sheep Record
Association, November 8.

American Oxford Down Record As-
sociation annual, November 8.

American Duroc Jersey Swine
Breeders' Association, November 9.

American Angora Goat Breeders' As-
sociation, November 9.

Many Types of IRRIGATION GATES

Made from Rust Resisting

ARMCO IRON

California Corrugated Culvert Company

Mines and Metallurgy Building

BEWARE of POORLY MADE HORSE COLLARS



More shoulders are being ruined
by poorly-constructed collars than
by the work the animals are doing.

W. DAVIS & SONS'

FELTFACE COLLARS are guar-
anteed to prevent sore shoulders.

If your dealer does not have
them, we will tell you where they
are to be had, or send direct if no
dealer is within reach.

Look for the felt at the edge of
the stitching.

Made to sell as follows:

FELTFACE, medium draft.....\$5.00

FELTFACE, heavy draft..... \$6.00

Our **CUSHION COLLAR**, a canvas and leather Boston Team Collar,
is now to be had for \$3.00.

ANOTHER GOOD SORE-SHOULDER PREVENTER

A selling agent (dealer) in nearly every town. If none in your town,
Write Us. Catalogue on application.

W. DAVIS & SONS, 2052 Howard Street, San Francisco, Cal.
California's Largest Manufacturers of Harness, Collars, Saddles.

AUCTION 54 Horses and Mules

Implements, Etc.

4 Miles North of Capistrano

AT GALIVAN. TAKE SANTA FE MORNING TRAIN TO GALIVAN, CON-
VEYANCES IN WAITING MORNING OF SALE. AUTOS TAKE SAN
DIEGO ROAD TO GALIVAN AND TURN EAST 1 1/2 MILES.

MONDAY NOV. 8 At 10:00 A. M.

The owners have instructed us to dispose on above date to highest bidders
POSITIVELY WITHOUT LIMIT OR RESERVE the following described stock
and implements:

Twenty extra good mules, 3 to 9 years old, weights from 1100 to 1400
pounds each, sound and in good condition and as fine a lot of young mules as
can be found.

Thirty heavy horses and mares, 4 to 9 years old, weights from 1200 to 1500
pounds each, sound and in fine condition. There are a number of matched
spans of both horses and mules in this sale, and buyers looking for extra good,
clean ranch stock should attend.

One team of driving horses, weights about 900 pounds, 5 years old and well
matched.

Two good saddle horses.
Implements: 18 sets of good double harness, 7 farm wagons, header beds,
spring wagons, three 6-gang plows, one 4-gang plow, one 3-disc plow, McCor-
mick mowers, rakes, steel harrows, disc harrows, Cyclones, spring tooth har-
rows, cultivators, sidehill harvester with attachments to thresh beans or grain,
2 gasoline engines, 2 1/2 horse and 1 1/2 h.p., lots of good lumber and roofing,
water tank, tank wagon, complete blacksmith outfit with assorted tools,
pipe, etc.

Terms—\$100 and under cash, over \$100 a credit of nine months with note
and approved security and 8 per cent interest. Five per cent discount for cash
on time sums.

If you are in the market for first class stock and implements don't miss this
genuine closing out sale. Free lunch at noon.
No outside stock will be offered at this sale.

F. & W. WAKEHAM, OWNERS, RHOADES & RHOADES, AUCTIONEERS,
LOS ANGELES

PIONEER ROOFING

—was chosen to cover the big exhibit palaces at the Exposition, because of its reliability and genuine worth. Pioneer Roofing has stood every test of heat, cold, rain and wind for more than 27 years; is economical at first and at last; needs no paint or repairs. It is sold under a guarantee that really guarantees.

ASK YOUR DEALER
or write us for sam-
ples, prices, and esti-
mates.

Pioneer Paper Co.
Manufacturers
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for Water, Oil,
Wine, Mining
and Cyanide

Pacific Tank & Pipe Company

Manufacturers
WOOD TANKS and PIPE

Wood Pipe for Irrigation, City Systems,
Mining Power Plants

Let Us Figure on Your Requirements
Address Nearest Office

404 Equitable Bank Bldg., Los Angeles, Cal.
318 Market St., San Francisco, Cal.

FUEL SAVING WITTE ENGINES

Kerosene, Distillate, Gasoline, Gas.
SOLD DIRECT FROM FACTORY. 5-YEAR GUARANTEE.
2 H-P \$34.95; 3 H-P \$52.50; 4 H-P \$69.75; 6 H-P \$97.75;
8 H-P \$139.65; 12 H-P \$197.00; 16 H-P \$279.70; 22 H-P
\$359.50. Portable Engines Proportionally Low.
Prices F. O. B. Factory.

Besides lower price, WITTE engines use less fuel
per H-P hour—from one-fourth to one-third less—
enough saving in a year to pay entire cost of engine.
Easy starting; no cranking. Our 25 years engine
building makes this higher quality for you, at a small
one profit for us. Used for all kinds of work.

New Book Free Write us, so we can send you by
return mail, full information.
WITTE ENGINE WORKS,
3103 Oakland Avenue,
Kansas City, Mo.
3103 Empire Bldg.
Pittsburgh, Pa.

**CASH
OR
EASY
TERMS**

Riveted Steel Pipe

for underground irrigation sys-
tem, city water mains, mining,
etc. This pipe is manufactured
in sections ten feet long—two
sections being riveted together—
making only one round seam in
twenty feet as against seven
round seams in the short length
pipe made by others. We have
all diameters on hand in large
quantities. Also all fittings, etc.
Catalogue free.

For Surface Irrigation Sys-
tems we recommend our Double
Riveted Lock Seam Surface
Irrigation Pipe. Write us your
needs.

**AMERICAN STEEL PIPE &
TANK CO.,**
354-55-56 Pacific Electric Bldg.
Los Angeles, Calif.
Branch: 1228 "H" St., Fresno.
(2)

GOOD DISINFECTANT

The great live stock show being held
at the Panama-Pacific Exposition is
thoroughly disinfected with Parke-Davis
& Co.'s Kresol. This work and the ex-
hibit of this company is in charge of S. S.
Dougherty, who is handling the situation
very capably.

Poultry Yard Pests

Written for California Cultivator by Jean A. Koethen.
Profit and Pests Cannot be Produced in
the Same Yard



NE of the most difficult prob-
lems of the California poul-
tryman is the keeping of his
birds and houses free from
lice, mites, ticks and fleas.

All these pests multiply rapidly in
warm weather and must be fought con-
stantly and persistently.

Lice

Lice, like the poor, are always with
us. Leghorns and other Mediterran-
ean breeds, often keep themselves
fairly clean without attention and can
be kept clean with two or three good
dustings yearly, but the fat, lazy hen
of the heavy breeds is rarely without
them unless she is regularly treated.
Dusting is the method most generally
employed in ridding hens of these
pests. A cheap powder is made by
mixing three parts gasoline with one
part crude carbolic acid or cresol and
adding gradually, while stirring, enough
plaster of paris to take up all the
moisture, which is generally about
four quarts plaster of paris to one
quart of the liquid. A dry, pinkish-
brown powder will result and may be
put through a sieve if lumpy. Work
this well into the feathers, especially
about the vent, as often as lice are
found. To avoid wasting the powder
hold the bird over a box or paper. On
some ranches a special dusting box is
kept for this purpose.

The dust box filled with road dust
or road dust mixed with lice powder
has gone out of fashion because the
birds declined to use it. Instead a
dusting hole of moist earth in the soil
of the run is recommended. Many birds
keep themselves fairly clean if they
have such a dust hole in a shady place.

Dipping the birds in sheep dip or
coal-tar preparations, while it is some-
times practiced, is out of the question
when a large number of birds are to
be treated and is only possible in very
warm weather.

Blue ointment, a mercury prepara-
tion which may be bought of any drug-
gist, has been successfully tried out by
many Petaluma ranchers and is highly
recommended by experiment stations.
It is thoroughly mixed with an equal
quantity of vaseline, and an amount
of the mixture no larger than a kernel
of corn rubbed into the fluff about the
vent. This ointment is poisonous and
must be carefully handled.

To prevent head lice in baby chicks,
grease heads with lard. Dust at first
with buhach, afterward with any good
louse powder

Turkeys are even more susceptible
than chickens to the ravages of lice
and should be dusted thoroughly under
wings and over head and back at least
once a week.

Mites

The common red mite, *Dermanyssus
gallinae*, is found in almost every hen
house that is not protected against it
by painting and spraying. It hides in
cracks, under the straw in nests, and
under the ends of roosts, and comes
out at night to suck the blood of its
victim. Absolute cleanliness is the
only protection against it.

Wash walls and roosts every two
weeks with the garden hose and paint
with a mixture of three parts kerosene
and one part crude carbolic acid or
three parts kerosene and one part
cresol, or with cresol disinfectant,
which is made by steeping a ten cent
cake of laundry soap in a pint of
water till a paste is formed, adding
one pound of commercial cresol, and,
when the paste is dissolved, a gallon
of kerosene. Carbolineum and other
coal-tar preparations are also recom-
mended. The main thing is that the
application be thorough, and no mite
allowed to escape. Nests should be
frequently renewed and nest-boxes
painted or sprayed. Remove all dropp-
ings at least once a week.

Brooders and coops where young
chicks are kept should be cleaned and
painted weekly with one of these prepa-
rations. Sitting hens' nests may be
made of tobacco stems or sprinkled
with tobacco dust or louse powder.
Nest boxes should be clean and new.

If necessary saturate boxes with kero-
sene, but keep the oil from the eggs.

Ticks

The poultry tick is a terrible pest
in some localities, especially where
soil is sandy and buildings are old. As
it is rarely seen in daytime, but sucks
the blood of its victim at night, it may
breed and multiply for some time be-
fore it is discovered. Fowls are some-
times protected by suspending roosts
by wires so that they do not touch the
walls, or by the use of the galvanized
iron house.

Soaking the walls of an infested
house with boiling soapsuds or with
soapsuds and kerosene, or with boiling
water alone will often rid it of ticks,
if thoroughly done, but in the worst
cases a corrosive sublimate solution
(eight ounces to 20 gallons of water)
has been found the only remedy. As
a rule, whatever will protect a build-
ing from mites will keep ticks out.
Once they are in they are the hardest
of all pests to eradicate.

Ticks that have fastened themselves
upon the heads or bodies of fowls may
be killed by touching them lightly with
a brush dipped in corrosive sublimate
diluted with alcohol, but this is a dan-
gerous remedy.

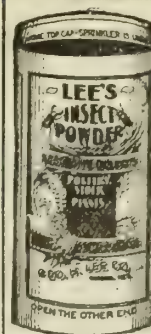
Fleas

Two varieties of fleas are known in
California, the common hen flea,
Pulex gallinae, and the stick-tight flea.
For the former thorough cleaning of
houses and painting walls and roosts
and nest boxes with carbolineum or
the kerosene and crude carbolic acid
mixture, with especial attention to
dark corners, or better still, their
elimination, and frequent changing of
straw in nests is sufficient treatment.

Stick-tight fleas, which are usually
found on dry, sandy soil, must be re-
moved from the heads of the birds
where they sooner or later find lodg-
ing, and also from the soil of the runs.
Paint the heads, where the fleas have
fastened themselves, with equal parts
kerosene and olive oil in which has
been mixed a little carbolated vasa-
line, taking care not to touch the eyes.
Clean runs thoroughly, removing
feathers, droppings and litter. Dis-
solve ten cents' worth of rock salt in
two gallons of water, add lime enough
to make a thin whitewash, and sprin-
kle the ground well. Keep the soil
moist by sprinkling for several days,
or, if possible, till cooler weather, for
heat and dryness are the conditions
under which fleas thrive, and damp-
ness is fatal.

DIRTY WATER DANGERS

How much disease amongst poultry
has its start in the drinking crock?
Even in the cool climates of the East
I have known first class poultrymen
attribute 50 per cent to the water.
One of the most successful men I ever
knew gave his chickens no water at
all for the first two months, and rarely
lost one. All the liquid they ob-
tained was from the morning dew and
the moisture in their soft food. Poul-
try don't need liquid always before
them any more than humans do. In
the hottest weather I see plenty of
men who practically never drink ex-
cept at meals, and they are quite as
well as those who don't like to let the
ice water out of their sight. What
happens when fowls do have water
always before them, especially in very
hot weather, is that they speedily
make it filthy and unsanitary. Instead
of being beneficial, it only becomes a
ready medium for conveying disease.
It is not easy to avoid this happening.
A running stream is the ideal but that
cannot be had by most people. The
next best thing is—plenty of shade of
course being provided—to let them
have what water they really want at
certain times, morning and night in
particular, and then turn the crocks
over. They may not like it at first,
but it is simply a matter of habit, and
they will soon understand. When you
have only a few birds it is not difficult
to do this.—J. R. Henderson, Phoenix,
Arizona.



Lee's Insect Powder

is a finely ground
powder that is certain
death to all insect life
and harmless to plants,
stock or poultry.

Lee's Lice Killer

The
Fumes
Kill



All
Insect
Life

The original liquid Lice killer and
contains more killing qualities than
any on the market.

Globe Mills

Los Angeles Colton San Francisco
El Paso San Diego



Coulson's Egg Food

Contains sufficient meat, blood
and bone to make a concentrat-
ed feed very suitable for poultry
during the fall and winter
months. The other ingredients
are carefully selected to give the
right balance and variety to the
feed.

If you are not feeding it now
a change at this time will do
your hens good.

Write us for particulars and
free book, "Chickens from Shell
to Market."

**Coulson Co. Petaluma,
Cal.**



Will Kill Insect Life

—on—
Trees — Plants
Stock — Poultry

DEVIL'S DUST is a deadly powder to all insect
life and absolutely harmless to Baby Chicks
Setting Hens or Plants.

For Sale Everywhere

Globe Mills

Los Angeles - Colton - San Francisco - El Paso
San Diego

Chicken Ranches

San Fernando Valley (4 miles from Van Nuys)
5 acres at \$400 an acre. Good terms. Near
Electric Line. Domestic and Irrigation Water.
Apply for full facts.

J. A. Dean

116 Hellman Bldg. 223 W. 2nd St.
LOS ANGELES, CALIFORNIA

Baby Chicks

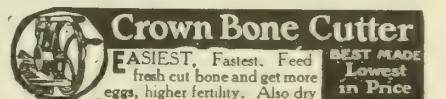
All standard varieties
of heavy breeds. Very
fine S. C. Black Min-
orcas.

White Leghorns. "Quality" our motto. Strain of
eggs, higher fertility. Also dry
Bone, Grain, Fertilizer and Shell
orders for fall delivery. Established 1909.

ARTESIA HATCHERY

Capacity 75,000 eggs.

F. W. Foster, Prop.



Crown Bone Cutter
EASIEST, Fastest, Feed
fresh cut bone and get more
eggs, higher fertility. Also dry
Bone, Grain, Fertilizer and Shell
Mills. All Sizes. Hand and Power. Write to-day for
Free Illus. Catalog. B WILSON BROS., Dept. 32 Easton, Pa.

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Money Making Little Liners

Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers.
LINER RATES ARE 12c PER LINE PER ISSUE
No Ad Accepted for Less Than 36c Per Issue. Figure 6 Words to a Line

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USED WINDMILLS—WINDMILLS NEW
8-ft. steel aermotor, steel tower, complete, \$30; 10-ft. steel direct mill, \$18; 10-ft. wood mill, fine, \$10; 10-ft. steel Star, \$25; 12-ft. steel mills, \$39.

USED TANKS—TANKS NEW
Redwood, 1000, \$13; 2000, \$19.50; 3000, \$25; 4000, \$29; 5000, \$35; 10,000, nearly new, \$55. 25,000, with 20-ft. stand, \$75; 35,000, 40-ft. stand, \$190; 50,000 with stand, \$250. We manufacture new galvanized tanks—1000 gal., \$19.50; 2000, \$29.50; wagon tanks, irrigating pipe.

ENGINES—ENGINES
1½-h., \$25; 2-h. Fairbanks, \$35; or with Jack, \$39; 3-h. R. & V., \$55; 6-h. Olds, \$68; 6-h. auto engine, \$25; 12-h. Stover, \$150; 11-h. White & Middleton, \$175; 28-h. Lambert, \$275; 50-h. Lambert, \$600.

PUMPS—PUMPS—PUMPS
Brand new special this week only. Brand new 3 Horizontal, \$32.50; used 4 fine, \$38; 5 Hor., \$42.50; two 5 verticals complete, \$69; 6 ver. complete, \$75; nearly new 7-inch Krogh vertical complete, \$50; foot shafting, \$125; 2 stage Krogh No. 3 pump, \$35; 2 stage 3 Byron Jackson, the latest complete, \$110; same thing in 5-inch, \$125, cost \$400, used year; No. 8 Hor., \$90; two-stage Hor. No. 5 Byron Jackson, cost \$290, for \$125; 6-inch Rotary new, \$50; 5x6 Duplex new, \$45; Meyers Duplex, \$30; Pitcher pumps new, \$2.75; hand force pumps, with or without cylinders, rods and piping.

BRASS CYLINDERS.
Double 4x60, \$25, cost \$65; double 5-inch, \$35, cost \$70; double 6-inch, \$38; double 8-inch to 60, good as new, \$70; 7-inch Stearns, cost \$200, good as new, \$70; 10-inch single, \$25; others too numerous to mention.

GATES—L'S—T'S—PIPE—FITTINGS
Gates, foot valves, 1/2 inch of new gates and checks, 8-in., at \$12; 6-in., \$6; 1/2 new galvanized pipe, 3000 feet left, \$8.75.

USED RANCH MACHINERY
Mowers, \$15 to \$25; mouldboard, disc riding plows, \$17 to \$29; hay rakes, \$15 to \$18; 6 gang disc for tractor, 1/2 price; beet seeder, \$29; \$160 Superior grain drill, \$75. 12 disc cultivator, crusher and roller, \$19; balers, headers, scrapers. Anything ranchers need.

BOILERS, PIPE, FITTINGS, ETC.
We do no fake advertising. Trade us what you don't want for what you need. If we haven't what you want, can find it for you quicker and cheaper than you can. We buy first-class used machinery, if price is right. No junk or stolen machinery wanted. DEMMITT CO., 120 N. Main, Los Angeles. A5191, Bdw. 3650.

For Sale—Used and new Gas Engines, 2 H. P. up, rebuilt and fitted with modern equipment. 22 years' experience enables us to repair and rebuild Gas Engines correctly. Get prices. Lloyd, 806-808 N. Main St., Los Angeles. F7020—Broadway 4103.

TREES

For Sale or Exchange—2500 Placencia
Perfection Walnuts; 4000 olives, San Bernardino County delivery; Valencia, lemons, grapefruit, all citrus trees; will trade citrus stock for clear vacant land, or equities that carry themselves. O. E. Van Slyke, 916 Story Bldg., Los Angeles, Cal., or Azusa, Cal.

Chase Walnut Trees, grafted on black
walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

Choice Lot of One-year-old Apple Trees;
first-class stock, 4 to 5 feet; \$5.00 per 100. Full line of nursery stock at equally low prices. Catalogue and price list on request. Wirt Nursery, R. F. D. No. 1, Portland, Oregon.

For Sale—At Corning, about 10,000 one
and two-year-old olive trees, Mission variety, exceptionally fine stock. For further particulars call on or address, R. M. Hardin, 1109 First National Bank Bldg., San Francisco.

For Acacias, Avocados, Budded Loquats,
Citrus trees, Evergreens, Feijoa, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

The "Chappelow" Avocado is the richest
grown—over 29 per cent fat. Buds from the parent trees \$5 per 100 by mail or express prepaid. Address Wm. Chappelow, Route 1, Box 104, Monrovia, Calif.

Walnut Trees—Eureka and El Monte
varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

Fig Trees. 25,000 two-year-old trees from
2 to 6 ft. high. Seventeen varieties. Write for price list. C. C. TerBush, R. F. D. 2, San Gabriel, Cal.

For Sale—Mission Olives, Burbank
Lemons, Seedless Grapefruit. One mile north of Exeter, Cal. Frank K. Asano, Box 376, Exeter, Cal.

Nurserymen—Pot grown conifers, palms,
shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Special Prices on best budded avocado
trees and other rare fruits. Semi-Tropic Nursery, P. O. Box 368, Monrovia, Cal.

Citrus Nurseries, Murphy Oil Company,
East Whittier, California. Selected stock for sale; inspection invited.

Budded Avocados—All varieties. Write
for descriptive catalogue. Newberry Sherlock, R. F. D. No. 2, Pasadena, Cal.

BEES

Instruction Books and Prices, Bees, Sup-
plies, Etc., Free. Spencer Apiaries, Ventura, Cal.

TURKEYS

Mammoth Bronze Turkeys—Limited
number, young toms from extra early stock hatched in January. \$7.50 each. T. W. Thomasson, R. F. D. 11, Box 579, Los Angeles.

RABBITS

Caldwell's Royal Red New Zealand
scored and sold on merit. Catalog free. Caldwell Bros., Box 613R, Los Angeles.

LIVE STOCK

Big Type Poland Chinas—I have an extra
good lot of strictly high class young boars from three months to one year old that are fit to head any herd anywhere. Visitors say they are the best they have seen. They have the large size, the good hams and shoulders, the strong arched backs, great length and depth of body, plenty of smoothness, mellowness and quality—in fact, they have two good ends and a good middle, are good lookers and money makers. Their dams are either from Illinois, Iowa or Missouri, or they are from dams whose sire or dam are from these states. These boars are sired by Iowa Wonder, who will weigh over 1000 pounds in show condition. He is a son of A WONDER, the greatest Poland China boar living or dead. These young boars carry the stamp of their sire and will sire pigs that will please you. Satisfaction guaranteed in every particular. I am overstocked. I have boars galore. I will sell them at extremely low bargain prices. No females for sale at present. The book on "THE HOG SUPREMACY—THE POLAND CHINA" will be sent to you free for the asking.

Yours for the BIG TYPE—the kind that grow faster and larger and have more pigs. Geo. A. Smith, Corcoran, Cal.

For Sale—Our Fine Registered Berkshire
Boar, Banker's Brother, A. B. A. No. 196175. Just coming two years old. Good quality and very active. A "top-notch." Price \$40.00. Also two five-months-old registered boar pigs by him out of Silver Star 9th A. B. A. No. 196557 and Lady Corona A. B. A. 199113 at \$15.00 each. These animals all in fine condition and can be seen at our ranch near Corona, Riverside County. Address Sterling Milk Co., Room 6, H. W. Hellman Bldg., Los Angeles.

Billiken Herd—Pure bred, pedigreed O. I.
C. Swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight, with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Del Dayo Farm (Old Haggin Bottom
Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Farmers and Dairymen—Liquid Ice to
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Grape Wild Farm Thoroughbreds—Guern-
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The Efficiency of Spray Machinery

Prof. C. W. Woodworth Writes for Cultivator Readers of Economy of Operation of Spray Machinery

A SPRAYER may often desire to know whether he is operating his outfit in such a way that he is securing the greatest economy in the work required in applying the spray. The necessary data is not available in any of the literature devoted to spraying to enable the determinations to be made; and the method of testing such apparatus is neither difficult nor does it require much expenditure of time.

The three features of a spray apparatus that must be separately tested are the engine, the pump and the nozzle. In the present paper we will only give the method of comparing the theoretical horse power with that obtained in actual practice.

a man can pump a gallon in five minutes and maintain a pressure of 90 pounds he is doing two-tenths of a gallon per minute, which by the table shows that he is exerting 1.04 man power and on a spurt he could do very much more than that.

The German military authorities are reported to have sent notice to all the sugar manufacturers in the country that statements must be made out covering the stocks of jute sacks, canvas, thread, rope and other materials used for the packing of sugar. As there is a shortage of these articles in Germany, the military authorities plan to commandeer the stocks on

Spray Pressure		HORSE POWER GALLONS PER MINUTE									
Lbs.		1	2	3	4	5	6	7	8	9	
10	.06	.12	.17	.23	.29	.35	.40	.46	.52		
20	.12	.23	.35	.46	.58	.69	.81	.92	1.04		
30	.17	.35	.52	.69	.87	1.04	1.21	1.39	1.57		
40	.23	.46	.67	.92	1.16	1.39	1.62	1.85	2.08		
50	.29	.58	.87	1.16	1.45	1.73	2.02	2.31	2.61		
60	.35	.69	1.04	1.39	1.73	2.08	2.43	2.78	3.13		
70	.40	.81	1.21	1.62	2.02	2.43	2.83	3.24	3.65		
80	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17		
90	.52	1.04	1.57	2.08	2.61	3.13	3.65	4.17	4.69		
100	.58	1.16	1.73	2.31	2.89	3.47	4.05	4.63	5.22		
110	.64	1.27	1.91	2.55	3.18	3.82	4.45	5.09	5.74		
120	.69	1.39	2.08	2.78	3.47	4.17	4.86	5.56	6.26		
130	.75	1.50	2.26	3.01	3.76	4.51	5.26	6.02	6.78		
140	.81	1.62	2.43	3.24	4.05	4.86	5.67	6.48	7.30		
150	.87	1.73	2.61	3.47	4.34	5.22	6.07	6.94	7.82		
160	.92	1.85	2.78	3.70	4.63	5.56	6.48	7.40	8.34		
170	.98	1.97	2.95	3.93	4.92	5.91	6.89	7.87	8.86		
180	1.04	2.08	3.13	4.17	5.22	6.26	7.30	8.34	9.38		
190	1.10	2.20	3.30	4.40	5.50	6.60	7.70	8.80	9.91		
200	1.16	2.31	3.47	4.63	5.78	6.94	8.10	9.26	10.43		
210	1.21	2.43	3.65	4.86	6.07	7.30	8.50	9.72	10.96		
220	1.27	2.55	3.82	5.09	6.36	7.64	8.90	10.18	11.48		
230	1.33	2.66	3.99	5.32	6.65	7.99	9.31	10.65	12.00		
240	1.39	2.78	4.17	5.56	6.94	8.34	9.72	11.11	12.53		
250	1.45	2.89	4.34	5.78	7.23	8.68	10.12	11.57	13.05		


The amount of power necessary to discharge a certain quantity of water under a specified pressure can be calculated as equal to the weight of that amount of water multiplied by the number of feet of height necessary to produce the pressure of discharge. Thus, since the weight of a column of water a foot high and a square inch in section is a little less than half a pound, a column over 200 feet high would give a hundred pounds to the square inch. A gallon weighs about eight and one-third pounds and therefore the delivery of a gallon at 100 pounds is equivalent to upwards of 1667 foot pounds.

A horse power is 3300 foot pounds per minute and therefore should give two gallons per minute at 100 pounds pressure, but in practice it is found it requires more power than this, (1) because an engine seldom is kept up to its rated horse power and (2) to overcome the friction in the pump, it is a common practice, therefore, to obtain an engine with four times the horse power necessary, thus expecting the efficiency to run almost as low as 25 per cent. Much better results than this should be secured. The method of testing is to find the maximum pressure the engine will make with all lines of hose open and find how long it takes, under these conditions, to fill a fifty-gallon barrel from which one can figure the minutes per gallon and by consulting the above table read the horsepower secured on the line corresponding with the readings on the pressure gauge. Then calculating what per cent this is of the rated horse power of the engine gives the per cent efficiency.

Thus if it takes ten minutes to fill the 50-gallon barrel and a five horse power engine is just able to hold the pressure up to 70 pounds, the rate per minute is five gallons and the table gives 2.02 horse power. This is 40 per cent of five and therefore the outfit shows 40 per cent efficiency.

The table can be used for man power on a hand outfit by reading the top line of figures as tenths of gallons since a man power is usually figured as a tenth of a horse power. If

hand and use them for military purposes.



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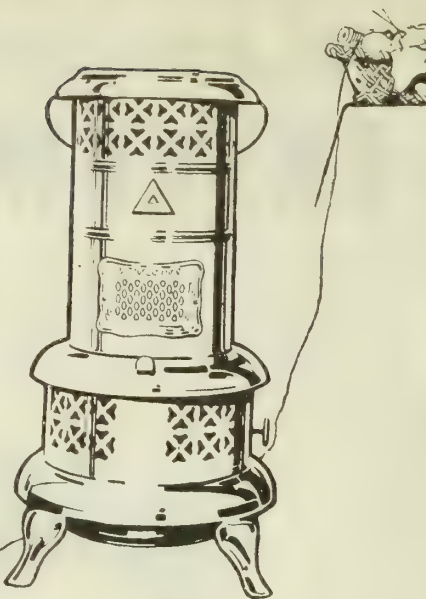
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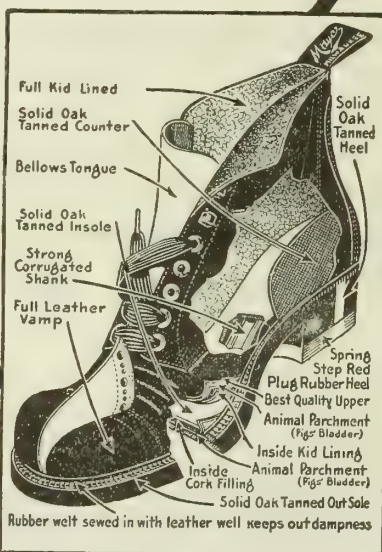
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(2)

Household Pests

Methods of Fighting the Pests That Bother the Housekeeper. Written for California Cultivator



FREEDOM from household pests is chiefly a matter of house cleaning or rather of a clean house. Well-screened windows and doors will keep out flies and mosquitoes and thorough cleaning and airing of dark corners will discourage most of the other pests.

Flies

Such a strenuous campaign has been conducted against the house fly throughout the whole country that his numbers have been sadly decimated. It is hardly necessary to say that all garbage and household waste should be tightly covered so as to offer no breeding ground for flies. In unscreened houses or where the pests have managed to effect an entrance in considerable number it may be necessary to use fly paper (if fly paper sticks to articles coal oil will remove it). Flies may be killed in a room by tightly closing it and burning fresh buhach or by the fumes given off by carbolic acid when dropped on a hot shovel. Twenty drops of carbolic acid is sufficient.

Mosquitoes

Mosquitoes will breed in any standing water, whether it is cesspool or a few tiny drops in a rusty tin can, therefore do not let water stand anywhere in summer time. The cesspool may be made innocuous as a breeding ground by pouring a little kerosene down the pipe. Mosquitoes will not deposit eggs on the surface of water that is kept in motion; therefore, tanks holding drinking water may be made mosquito proof by keeping the surface of the water agitated by a small wheel connected with the windmill. Pools should be drained where possible or should have a thin film of crude oil and kerosene, half and half, poured over them occasionally. This will destroy eggs and larvae. Screens at doors and windows of course are the best means of keeping mosquitoes out of the house. Concentrated ammonia neutralizes the poison of the bite.

Fleas

If floors are washed with hot soap-suds containing a little kerosene or gasoline and rugs shaken and aired frequently there is little likelihood of fleas overrunning the house. An excellent flea trap is made by a sheet of fly paper in the center of which is placed a small bit of raw meat. Where cats and dogs bring fleas into the house rubbing fresh buhach into their fur will stupefy the fleas so that they will drop off. If an old newspaper is placed under the animal while you are treating it the fleas may be gathered up and burned.

Ants

To check an invasion of ants the first thing to do is to put every scrap of food possible into tightly covered jars or boxes, then clean pantry shelves. A solution of corrosive sublimate in wood alcohol wiped around shelf edge, floors and windows evaporates quickly, leaving no odor or stickiness. One or two applications in season is usually sufficient. If nests can be found pour boiling water, kerosene, gasoline or distillate into them. Fresh buhach scattered over their runs will prove a temporary deterrent but must be renewed frequently as it soon loses its strength. An effective ant trap is made by placing a little sugar syrup containing about one-fourth per cent of arsenic in a covered jar, through the top of which tiny holes have been bored. This jar may be placed on the pantry shelves as the holes are only large enough to permit the entrance of ants. They will gorge themselves on the poisoned syrup and take it back to their nests and usually in a short time the whole colony will be cleared out. Some proprietary ant

pastes well known to all housekeepers are quick exterminators.

Cockroaches

Cockroaches, water bugs and black crickets are always attracted to dark or damp places about the plumbing. Fill all cracks with cement or dust with chloride of lime, powdered borax or fresh buhach.

Rats and Mice

Rats and mice are best controlled by their hereditary enemy, the cat. Various simple traps have been patented which are very effective. One can usually find the holes where mice enter and stop them up with a piece of tin or cement.

Moths and Buffalo Bugs

Moths and Buffalo bugs (carpet beetles) sometimes drive the most careful housekeeper to desperation. Clean, air and dust as you will the pests keep coming. The only way to save woolen clothing hung in closets is to inspect frequently, shake and air. Every closet should have a window if possible, and the window should be opened often. Woolens or furs that are to be packed should first be thoroughly sunned and aired, then wrapped tightly in paper. If boxes are used all openings should be pasted with strips of paper. Boxes lined with tarred roofing paper are moth proof. Woodwork of closets should be wiped with water to which a little turpentine has been added.

The Buffalo bugs or carpet beetles tuck themselves away in dark cracks in the floors or behind baseboards. Hot water, kerosene or benzine poured into the cracks will destroy them or it is better of course to fill up cracks with paint or putty, or something of that nature. Both moths and carpet beetles may be trapped in closets by laying old woolen cloths on the floor and frequently collecting and burning.

Meal Moths, Worms, Weevils, Etc.

Unless eggs of these pests already exist in meal or flour there will be no trouble from them if foods are kept in dry, tightly-closed receptacles. Once they have entered about the only treatment possible is fumigation with carbon bisulphide. In fumigating a barrel of flour, for instance, place one-half to a full teacup of carbon bisulphide on top of the flour and cover tightly. No light should be brought near during the process of fumigation as the gas given off by this liquid is very inflammable. The gas is heavy and will penetrate down through the contents of the barrel. In very severe infestations a second treatment may be necessary. This treatment is also effective for weevils in peas or beans. It does not in any way harm or affect the food value of the materials treated.

Bedbugs

Of course we have no bedbugs in California. Occasionally, however, a traveler comes in over the overland and visits for a short time. Boiling water or corrosive sublimate will search out these pests in the tiniest cracks. The corrosive sublimate should be dissolved in alcohol. Fresh buhach powdered into cracks is also effective.

Fumigating

It is sometimes necessary to resort to fumigation with hydrocyanic acid gas to rid old buildings of vermin. All insect life will be killed by this treatment, as will also rats and mice. Directions for fumigating will be found on page 437 of this issue, also in Circular 127 of the University of California college of agriculture. This is "House Fumigation," written by Prof. C. W. Woodworth, and may be had free on request to the College of Agriculture, Berkeley.

When writing advertisers, mention The Cultivator.

FOUR-FOOTED PESTS

Continued from Page 446

poison. Handle it and the poisoned grain with the greatest care.

Gophers

The best gopher remedy is a good gopher trap. Many prefer the old-time steel trap, but this is too liable to get clogged with the dirt and stones which the gopher pushes up. Others prefer the box trap. This is rather cumbersome, however. The principal point in selecting the trap is to see that the

springs are sufficiently strong to hold Mr. Gopher once he is within its jaws. We have used traps which merely caught a bit of the fur of the animal and allowed him to escape. Once he has had this warning he becomes very wary and it is very difficult to capture him on second trial. One may sometimes find a hole open and save digging, but the best method is to dig down to the main run and set two traps. Excepting for about one month in the year, the spring breeding season, the gopher lives absolutely alone, so that when one is caught in a hole there is no use in attempting to catch another in the same place.

The best poison for the gopher is strychnine; a grain placed in the middle of a big fat raisin or in a piece of apple or potato is usually sufficient. Where a large acreage is to be covered this is perhaps more economical than trapping. Poisoning, however, must be followed more persistently, for one cannot know results as in trapping. The same poison may be used that is recommended above for squirrels. Care must be exercised to keep these poisons from poultry or other domestic animals.

Rabbits

Trapping is too slow for the jack rabbit in California. The best method of control is the rabbit drive where entire neighborhoods unite on some holiday and capture them by thousands. Where the drive is impossible the best protection is afforded by mesh wire fence. A comparatively low fence answers, for they will seldom jump or climb to any height.

When poisoning is practiced at the dry season of the year, fruit with strychnine, especially the rind of watermelon, answers the purpose best.

Coyotes

The coyote is not such a universal pest as he is usually credited with being. His food is made up largely of rabbits, gophers, field rats and other pests of the farm. However, he is not averse to a fat spring chicken or young lamb. Hence he is usually hunted and often bounties are offered for his scalp.

Trapping is perhaps the best method of control. If a trail can be found that they are wont to follow, a steel trap masked with a light covering of leaves, being sure there are no sticks to prevent the trap having full effect, will capture the coyote without the use of bait. Decaying meat dragged for a few hundred feet over the ground to the trap, with a few pieces of meat scattered at different points, will perhaps lead him over the jaws of the trap.

Poisoned meats sometimes get him, but here again there is possibility of destroying the lives of farm stock. The best poison to use is pure sulphate of strychnine; two grains are sufficient for a coyote. Where one makes a business of poisoning he often takes the druggist's two-grain capsules and fills them with strychnine. Use of the capsule prevents the meat from becoming bitter.

Rats

Losses from rats in this state are not so high as in many others, but vast quantities of grain are taken by them. In constructing farm buildings care should be taken to leave no hiding places. Rubbish or brush piles should be kept cleared away and all feed and grain stored in rat proof rooms or bins. Perhaps the best remedy is the encouraging of hawks and owls in their efforts to destroy these pests.

Perfect cleanliness about all stables and buildings is a great factor. A virus has been tried but has not proved so beneficial as was anticipated. Where rats are under barns which may be closed tightly and other animals may be removed, fumigation with hydrocyanic acid gas will kill them.

The best poison is barium carbonate. It is likewise cheap. An extremely small dose works and it has the advantage of being very slow in action so that the rats usually escape from the building before dying. Mix four parts of meal or flour and one part of the mineral. Or the barium carbonate may be sprayed upon fish or toasted bread or any food the rats like. If it is desired to hasten their death water may be placed near.



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San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Nov. 3, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras 26
Firsts 23

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies 15
Arizona Longhorn 17@17½
California Fresh 16½
Eastern Cheddar 20@21
Cheddar 20@21
Domestic Swiss 19@20
Eastern Daisy 18½
Eastern Twins 18½
Imported Swiss 40
Longhorn 18½@19
Oregon Triplets 16@17
Tillamook 16½@17

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts 43
Candled 45@47
Northern Fresh Extras, f. o. b. S. F. 50

Prices to producers:
Hens, lb. 14@17
Roosters, old 9
Broilers, lb. 22
Fryers 15
Roasters, lb. 14
Turkeys 17@19
Ducks 13
Geese 11
Squabs, doz. 1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt. 7.00
Prime Steers 7¼@7½
Heifers 6¼@6½
Calves, lb. 9@9½
Sheep—
Ewes, head 4.50
Wethers 5.00
Lambs, head 5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug 55
Rurals 1.10@1.15
Idaho Russets 1.30@1.45
Northern Burbanks 1.25@1.60
Salinas 1.60@1.75

PUMP

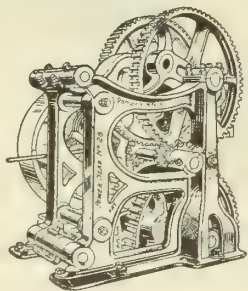
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WRITE FOR CATALOG NO. 103 containing valuable information on irrigation. In writing please mention the depth of your well and where located.

Pomona Mfg. Co.
Pomona, Cal.

ONIONS

Wholesale selling price:
Boiling Onions, lug 1.00
Pickling, lug 1.25
Brown Globe, cwt. 1.50
White Globe, lug 85
Garlic 12
Sets—
White, lb. 8
Yellow, lb. 7

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz. 1.00@1.25
Beets, doz. 35
Beans—
Wax 5@5½
Limas 5½@6
Green 5@5½
Brussels Sprouts, lb. 11@12
Cabbage, sack 1.25
Northern, lb. 1½@1¾
Carrots, doz. 30
Cauliflower, doz. 75
Celery, doz. 75@1.75
Chicory, doz. 40
Chives, doz. 1.00
Corn, lug 55@60
Cucumbers, lug 65@70
Pickling, lug 1.00@1.50
Egg Plant, lb. 3@3½
Escarole, doz. 90
Horseradish, lb. 17
Leeks, doz. 40
Lettuce, doz. 30
Mint, doz. 40
Okra, lb. 6@7
Onions, Green, bunch 20
Oyster Plant, doz. 40
Parsnips, doz. 35
Peas, Telephone 7½@8
Peppers—
Bells 5@5½
Chili, lb. 5@5½
Pimientos, lb. 6
Rhubarb—
Strawberry 1.00
Spinach, doz. 20
Squash—
Crockneck, box 40
Hubbard, lb. 1½@2
Summer, lug 40@45
Tomatoes—
Lug 85
Turnips 40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower 85@1.15
Jonathans 1.50@1.85
King David 1.50@1.65
Peaches, Red 1.10@1.15
Peaches, White 1.10
Spitzenberg 1.35
Yellow Newtown Pippins 85@90
Bananas, lb. 4@4½
Berries—
Strawberries, basket 8@10
Blackberries, basket 8@10
Raspberries, basket 13@15
Cantaloupes—
Paul Rose, crate 1.75
Casabas, crate 1.75
Cranberries, bbl. 9.25
Figs—
Black 65@75
White 65@75
Grapes—
Black Hamburg, lug 75
Malagas, lug 1.10
Morocco, lug 1.00
Muscats, lug 85
Tokay, lug 1.35
Cornichon, lug 90
Red Emperor, lug 1.35
Guavas, lb. 6
Peaches—
Clings, box 65@75
Freestones, lug 1.15
Elbertas, lb. 1½@2
Pears, Bartlett, packed box 2.50
Winter Nelis, lug 1.00
Persimmons, lb. 8@9
Pineapples, lb. 6@7
Pomegranates, lug 1.00
Quinces, lug 50@60
Watermelons, lb. 1½

CITRUS FRUIT

Wholesale selling price:
Lemons 1.75@2.25
Juice Lemons 1.25
Grapefruit, Seedless 3.50
Limes, basket 1.00
Valencias 4.50

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes, 7½@9
Apricots 9@16
Figs:
Loose black, box 1.35
Loose white, box 1.60
Calimyrna, box 1.25@1.50
Peaches 5@7
Pears, lb. 11
Prunes, fancy pack 5½@13

NUTS

Walnuts—
No. 1 1914 1915
No. 2 16.50 13.60
Buds 12.00 10.60
Jumbos 20.00 17.00
See almond quotations by Association under San Francisco.
Feanuts—
California, Raw 5@6
Japan 5½@6
Eastern 6½@7
Chinese 5
Pecans 17

HONEY

Wholesale selling price:
Comb, Fancy Water White 16
Extracted Water White 7½@8
White 6½

Light Amber 6
Beeswax 25@26

RICE

Wholesale selling price:
California 4.25@4.75
Broken 2.75@4.25

BEANS

Wholesale selling price:
Limas 5.25
Lady Washington 6.25
Pinks 5.00
Black Eyes 4.00
Lentils 20.00
Manchurian Reds 4.00@4.25
Small White 6.00
Garbanzos 5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley 14.00@15.00
Wheat Hay 12.00@15.00
Tame Oat 14.00@18.00
Alfalfa 12.50@15.00
Volunteer 6.00@8.00
Straw 5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow 2.00
Corn, White 2.20
Wheat 2.05@2.10
Oats, White 1.75
Oats, Hulled 2.25
Egyptian Corn 1.85
Kaoliangs 1.50
Barley Seed 1.60
Barley, Hulled 1.95
Kaffir 1.75
Milo 1.60
Sunflower Seed 6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal 1.25
Bran, Heavy 1.55
Alfalfa Molasses, per cwt. 1.35
Beef Scraps 3.00@3.10
Beet Pulp 1.25
Molasses Beet Pulp 1.20
Cracked Corn, cwt. 2.05
Cracked Wheat, cwt. 2.20
Cotton Seed Meal 1.90
Bone, Green 1.75@1.85
Meat Meal 3.00@3.10
Charcoal 1.90@2.00
Oil Cake Meal 2.50
Fish Meal 3.15@3.25
Rolled Barley 1.55
Rolled Oats 1.80
Middlings 1.85
O. & W. Middlings 1.80
Feed Meal 2.10
Scratch Feed 2.10@2.20
Oyster Shell 1.15@1.25
Scratch Gritlets 2.30@2.40
Poultry Mash, 90-lb. sk. 1.90@2.00

San Francisco Markets

SAN FRANCISCO, Nov. 2, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras 27
Prime Firsts 25
Firsts 24

CHEESE

Wholesaler to retailer:
Young America 18
California Flats 15½@17
New York Cheddar 19
California Cheddar 16½
Oregon Twins 14½
Oregon Young America, fancy 14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Price to producer:
Fresh Extras 50
Select Pullets 40
Hens, lb. 13@17
Fryers 19@21
Broilers 22@26
Roosters—
Young 17@19
Old 8@10
Squabs 2.50@3.50
Turkeys 17@25
Ducks 10@13
Geese 11@15
Belgian Hares 7@9
Live Weight 11@12½
Dressed

LIVE STOCK

San Francisco prices, gross weight:
Steers 4@6½
Cows and Heifers 3@5½
Calves, lb., live wt. 6@9
Hogs 4@6½
Wethers 6@6½
Ewes 5@5½
Milk Lambs, lb. 7@7½

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt. 1.35@1.60
Delta Burbanks, cwt. 80@1.15
Idaho Rurals 1.00@1.10
Idaho Russets 1.10@1.25
Oregon 1.00@1.25
Sweets 1.20@1.30

ONIONS

Wholesale selling price:
Onions, cwt. 85@1.00
Garlic 8@11

VEGETABLES

Wholesale selling price:
Artichokes, doz. 20@35
Beans—
String, lb. 2@4
Limas, lb. 3@3½
Wax, lb. 3@4
Celery, doz. 30@40
Corn, sack 50@1.25
Cucumbers, lug. 35@60
Egg Plant, lug. 50@75
Okra, lug 40@65
Peppers—
Bell, box 50@60
Chili, Mexican, lug 35@45
Squash, Summer, lug 35@50
Hubbard, sack 50
Cream 50@65
Tomatoes, lug 75@1.00

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower 60@90
Newtown Pippins 70@1.00
Rhode Island Greenings 50@75
Jonathans 60@1.00
Bananas, Hawaiian, bunch 75@1.50
Cantaloupes—
Delta, lugs 30@50
Turlock 90@1.15
Casabas, crate 50@75
Cranberries, Eastern, bu. 8.25@9.25
Figs, box, black 75@1.00
Grapes—
Malagas, crate 50@60
Muscat, crate 60@75
Verdel, crate 40@55
Seedless 1.25@1.40
Tokay, crate 65@75
Huckleberries, lb. 7@9
Pears—
Winter Nelis, box 75@1.50
Persimmons, box 70@1.00
Pineapples, doz. 1.00@1.75
Pomegranates, small boxes 75@1.50
Quinces, box 40@70
Raspberries, chest 5.00@7.00
Strawberries, chest 5.00@6.00
Watermelons, doz. 75@2.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit, seedless 4.50@6.00
Seedlings 2.50@3.50
New Crop 3.25@3.50
Lemons 1.50@3.25
Lemonettes 1.25@1.75
Limes, Mex., cs. 5.50@6.50
Valencias 3.75@4.75

DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis, in carload lots, 1915 crop: Santa Claras, 3¼@4¼c. All outside sections ¼c lower.
Other Fruits. Stand-Choice Extra
50-lb. boxes ard. Choice Choice Fancy
Apricots 6¼c 7¼c 8¼c 9 c
Peaches 3¼c 3½c 3¾c 4½c
Pears 7 c 8 c 9 c 10 c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6¼c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5¼c; 4-crown, 6c.
The above prices are for October, November and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.
Nonpareil 14½
IXL 13
Ne Plus 12
Drake's 10½
Peanuts—
Unpolished 3½@4½
Polished 4@5½
Shelled, China 5½@6

BEANS

Wholesale selling price:
Limas 4.85@4.95
Pink 4.00@4.10
Black Eyes 3.25@3.50
Cranberry 4.85@5.00
Small White 5.30@5.40
Garbanzos 3.25@3.75
Large White 5.25@5.35
Bayou 4.95@5.00
Manchurian Speckled Bayous 4.00@4.25
Red Mexican 4.75@5.00
Red Kidney 6.00@6.50
Horse Beans 2.00@3.60

HONEY

Wholesale selling price:
Comb, Water White, new 14@16
Light Amber, new 11@12
Amber, new 7@8
Extracted White 6½@7½
Light Amber 4@5½
Dark Amber 2
Beeswax 25@28

HOPS

Wholesale selling price:
Sacramento Valley 10½@12½
Sonoma-Mendocino 13½@15
Oregon-Washington 13½@15

TREES

THIS year above all years, you should place your orders for trees with us. We know the condition of the markets, the probable outlook when your trees come into bearing, and every other factor that concerns the planter.

For 31 years we have been successfully growing nursery stock in this state. Our nurseries and orchards are the largest in the West—covering over 2000 acres in the choicest spots of California—located where soil and climate are conducive to growing the strongest, healthiest stock.

Thousands and thousands of successful growers all over the West will attest to the value of Roeding's true trees. They know that it pays to buy the best.

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Guavas
Cherries
Loquats
Grapes
Chestnuts
Etc.
Figs

WRITE US

Let us know what you propose to plant this season and send us your list for prices and suggestions. We will gladly give you the benefit of our experience without any charge.

If you live in Southern California, Address

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1607 E. Washington St., Los Angeles, who will give you the same courteous, careful attention as if your orders were sent to us.

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Why Let Squirrels and Rabbits Bark Your Trees

when for about a penny apiece we can save every one of them for you? Tell us your pest and we will tell you what kind of protectors to use. We make a number of kinds and can save every tree for you if you will tell us what your pest is. This is the season of year when squirrels and rabbits damage your trees. Write us for samples and price.

The Expan Co.

935 East Central Ave. Redlands, Cal.

Chandler, Arizona, cotton growers are getting six cents for seed cotton.

HAY	
Under date of October 30 Scott, Magner & Miller say:	
Receipts for the past week were 2366 tons. Receipts would be larger were it not for the scarcity of cars. Fancy wheat and red oat are extremely scarce and sell at top figures.	
The market is firm throughout the entire line, especially in stock hay. Trade from interior points is exceptionally good. Export trade is about as usual. Interior alfalfa is in greater supply.	
We quote the average wholesale prices for hay in carload lots on today's market as follows:	
Fancy Wheat Hay (11 bales)...	17.00@18.00
No. 1 Wheat or Wheat and Oat	12.00@15.00
No. 2 Wheat or Wheat and Oat	10.00@11.50
Choice Tame Oat	14.00@15.00
Other Tame Oat	10.00@13.50
Wild Oat	8.00@10.50
Alfalfa	10.00@14.00
Stock Hay	6.00@8.00
No. 1 Barley Straw	25@40
GRAIN	
Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.57 1/2@1.65
Blue Stem	1.75@1.77 1/2
Barley Feed	1.25@1.30
Shipping and Breeding	1.27 1/2@1.32 1/2
Corn, Eastern Yellow	1.62 1/2@1.65
New	1.55@1.62 1/2
Corn, Egyptian White	1.50@1.52 1/2
Oats, Red, Feed	1.27 1/2@1.35
Oats, Red, Seed	1.37 1/2@1.42 1/2
Oats, White, Feed	1.35@1.37 1/2
Oats, Black, Feed	1.75@2.00
Millet	2 1/2@3
Rape	2 1/4
Flaxseed	5@5 1/2
Rye	2.00@2.25
FEED STUFF	
Wholesale prices.	
Alfalfa Meal, car lots	16.50@17.50
Bran, ton	26.00@27.00
Feed Cornmeal	40.00@41.00
Cracked Corn	40.00@41.00
Rolled Barley, ton	26.50@27.50
Middlings	30.00@32.00
Shorts	27.00@28.00
Oilcake Meal	37.50@39.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 3, 1915.

The few Valencias yet to go are assured of satisfactory prices as the market is now very good indeed. There are probably not more than 75 cars left in California and these will be cleaned up within a few days. The navels will start moving eastward from Northern and Central California as soon as they ripen up a little more. It is impossible to tell just how soon this will be, but growers expect to be sending out full shipments by the 20th.

The lemon market is in excellent condition. Sales were reported yesterday in Boston at over \$5.00. Only the best of stock is now going forward.

Shipments

Shipments of oranges from Southern California to date since November 1, 21 cars; lemons, 8, total 29. To same date last season, oranges, 27; lemons 7, total 34. Reports from northern and central shipping points for the new season beginning November 1 are not yet available. Last year's shipments from Tulare County: oranges, 5670, lemons, 223, total 5893. From Northern California last season: Oranges, 632; lemons 2.

PRESSURE CONTROL

Power sprayer pressure control is a very serious problem and one that has not heretofore been successfully accomplished. Every fruit grower who has ever had anything to do with a power spray pump recognizes the pressure control methods as a weak point. There must be continuous high pressure.

The new Alpha Automatic Pressure Governor, with which the Alpha Combination Power Spray Outfit is equipped, is a new device for this purpose. It is a simple arrangement of two levers and a spring on each plunger connecting rod which, when the pressure reaches a predetermined limit, automatically discontinues the operation of the pump without interrupting the driving power, again permitting the pump to resume operation when the pressure falls below the point at which it has been set.

This insures safety, secures uniform pressure and eliminates unnecessary wear, for no liquid is pumped at all when the nozzles are closed, as the pump ceases operation and remains inactive

until a nozzle has been opened and the pressure drops below a certain point. Then the pump immediately resumes operation, the engine idling during the inactive period.

No liquid is pumped except that it passes through the nozzles. The greatest danger in the use of a defective pressure regulator is the liability of bursting the pump.

Further information can be had by writing the De Laval Dairy Supply Co., San Francisco.

COMMERCIAL ACTIVITIES

The American Pump Company, formerly of 133 North Los Angeles street, has moved to 420 East Third street. This is a branch of the California Hydraulic Engineering and Supply Company of San Francisco. Mr. L. C. Thompson is the Los Angeles manager.

The Pacific Coast Roofing Manufacturing Company, of San Francisco, is offering roofing at special prices. You would probably find it to your advantage to get in touch with this company.

Don't fail to read the ads in each issue of the Cultivator. You can't go wrong by dealing with the most progressive firms and they are the ones who tell you about their products through our columns.

Animal Manure as a Fertilizer

Fresh horse, cow and sheep manure
Rotten manure
Call or write

PACIFIC MANURE AND FERTILIZER COMPANY
429 Davis Street, San Francisco

San Mateo held its annual flower show October 29-31.

Trees

We are now booking orders for Winter and Spring delivery and will be pleased to receive a list of the nursery stock you expect to plant for our estimate of cost to you.

We have a fine stock of Deciduous and Citrus Fruit Trees—especially large quantities of Prunes, Apricots, Pears, Apples, Almonds, Peaches, Oranges, Lemons and Grapefruit; also a full line of Shade and Ornamental Trees, Shrubs, etc. All grown in our nursery plants in Fresno, Madera and Tulare Counties.

Please mention what varieties you are interested in.

Prices on application.

Kirkman Nurseries

Main Office, 2501 Tulare St.
Fresno, Cal.

COLUMBIA

"Gee! This beats going to town all hollow!"

"All the music of all the world—and most of the fun of it, too," is ready for you always with a Columbia Grafonola in the home. Grand opera, overtures, bands, instrumental, dance music, ragtime, comics—all are at their best on Columbia Records played on a Columbia Grafonola.

More than 8500 Columbia dealers are glad at any time to demonstrate Columbia Grafonolas—if there is not one near you, write us.

Columbia Graphophone Company
J672 Woolworth Bldg. New York

TORONTO: 365-367 Spadina Ave. Prices in Canada plus duty. Creators of the Talking Machine Industry. Pioneers and Leaders in the Talking Machine Art. Owners of the Fundamental Patents. Dealers and Prospective Dealers write for a confidential letter and a free copy of our book "Music Money."

COLUMBIA GRAFONOLA "JEWEL"
Other models \$17.50 to \$500. Easy Terms. **\$35**



Columbia
Records
Note the Notes

EVERYTHING FOR THE RANCHER.



Arnott-Imperial Engine Harrow
Carried in Los Angeles stock in 3 sizes—
9-foot
8-foot 10-foot
Write for special circular.



SANDERS-ARNOTT DISC PLOWS
One to 8 disc for horse, tractor or engine. Large assortment in stock at all times. Send for catalogue.



LAND ROLLERS
We have all styles of Rollers and Pulverizers. Get our catalogue and prices on all popular sizes.

ARNOTT & CO. INC. 112-118 S. LOS ANGELES ST.
LOS ANGELES, CALIF.

ARNOTT **ARNOTT**



After a painting by G. P. A. Healey in the Museum of the Brooklyn Institute of Art and Science

Charles Goodyear

An Accounting to the American People

THIS MONTH marks the fiscal close of the most phenomenal year The Goodyear Tire & Rubber Company has ever known.

Goodyear tire sales were far, far greater than in any previous year.

They were far greater than the sales of any other tire in the world. Other Goodyear products registered an equally enormous gain.

It seems to us a fitting time to render an accounting to the American people, to whom we are indebted for this unprecedented prosperity.

And it also seems to us a propitious time to acknowledge another debt to one of the world's great industrial geniuses, who spent almost his last days in a debtor's prison.

What this business is, in its first and last essence, it owes to Charles Goodyear.

It was not founded by the man whose honored name it bears.

But it has brought to that name, at last, the world-wide eminence which was denied him during his life.

His indomitable spirit has been a never-failing source of inspiration — in every branch of its thousandfold activities "his soul goes marching on."

Charles Goodyear was a man with a fixed idea — pre-destined, almost by reason of that fact, to disappointment, disaster and seeming disgrace.

His fixed idea was the vulcanization of rubber — and on this bed-rock idea there rests today that mighty industrial structure, the rubber business of the world.

In the remotest corners of the globe, wherever civilization pierces its way into the wilderness; in the jungles, and on the plantations, where millions of black men toil to satisfy the world's supply—*Goodyear means rubber and rubber means Goodyear*,

By right of inheritance, by right of adoption, by right of devotion to his high ideals, not merely the tire supremacy of the world, but the rubber supremacy of the world belongs to the Goodyear Tire & Rubber Company.

And so this business which perpetuates his name is also animated by a fixed idea.

And that fixed idea is that The Goodyear Tire & Rubber Company is bound to win the world-wide rubber supremacy if it simply upholds and maintains the goodness of Goodyear.

We believe firmly in the ultimate triumph of manufactured goodness.

We believe that the American people are everlastingly on the alert to find that which is worthy.

We believe they have awarded first prize to Goodyear because they believe in Goodyear.

We are convinced that no one can take that place away from us as long as we are true to them, and true to ourselves.

And because we prize this good will as the most precious asset of this business, nothing unworthy shall go out into the world under the brand of Goodyear.

The spirit of Charles Goodyear stands guard over every operation and every department in these great factories.

It says to every man on the Goodyear payroll, from the highest to the lowest: "Protect my good name."

Wherever, and whenever, man, woman, or child, thinks of aught that is made of rubber — we want their second thoughts to be of Goodyear.

And to the end, we repeat — nothing unworthy shall ever go out of these great factories under the brand of Goodyear.

The Goodyear Tire & Rubber Company

AKRON, OHIO

F. A. Seiberling, President



Leading Goodyear Akron Products

Fabric and Cord Automobile Tires
Laminated Tubes for Automobile Tires
Automobile Tire Accessories
Repair Materials
Automobile Rims
Pneumatic Tires for Trucks
Solid Motor Truck Tires
Tires for Fire Apparatus
Carriage Tires
Motorcycle and Cycle Car Tires
Motorcycle Tubes
Bicycle Tires and Tubes
Aeroplane Tires, Springs and Fabric
Military and Other Balloons

Rubber Soles for Shoes
Wingfoot Heels for Shoes
Lawn Hose
Radiator Hose
Kantink Garage Hose
Steam Hose
Suction and Miscellaneous Hose
Goodyearite Packing
Conveyor Belts
Transmission Belts
Rubber Bands
Molded Goods
Offset Blankets
Rubber Specialties

GOODYEAR TIRES

CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

November 11, 1915

SAN FRANCISCO

Judging the Sheep and Hogs at P. P. I. E.



1

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5

In the upper left corner is given a photo of a Duroc-Jersey sold to a Nebraska breeder for an even \$1000 after ribbons were placed. Upper right is a Rambouillet ram owned by King Brothers & Company, said by exhibitors to yield 40 pounds of wool per clip. The ram measures five feet, two inches. The center photo shows some of Bernstein's Poland-Chinas.

At the bottom left to right: John E. Webb of Indiana, Judge of the Rambouillet class, examining texture and length of wool. 2. L. E. Frost, Editor of the Berkshire World, in characteristic pose. 3. Fred S. Moore, Secretary White Swine Record Association. 4. At left, Prof. H. W. Mumford of Illinois, Judge of the Duroc-Jerseys. At his right Bob Evans, Secretary of the American Duroc-Jersey Association.

5. The first figure at the left is Prof. C. F. Curtiss, President of the American Berkshire Association, while next to him and somewhat in the background is D. O. Lively, Superintendent of Live Stock, P. P. I. E. The gentleman at the right of picture is A. W. Foster, treasurer of the exposition, and owner of Hopland Ranch. Facing him is his son, superintendent of the ranch.

San Francisco Exposition Prize Winners

His Best Son

Butte City Ranch, Butte City, Glenn County, California

Has Bought **Mayhews Leader 6th**

from the Great Berkshire Breeder, A. B. Humphrey

Mayhews Leader is sired by the great grand champion boar Grand Leader 2d L. E. Frost, Berkshire expert and editor of the Berkshire World of Chicago, says of Mayhews Leader 6th. "A grand pig—one of the very best in America and will without question be a great sire. I class him among the 'tops.'" He will be one of our 5 herd boars. We are booking orders for spring pigs. Get yours in early.

Riverina Farms Large Yorkshires

For Sale—Panama-Pacific International Exposition Grand Champion Boar, sired by the Reserve Grand Champion boar and out of the Grand Champion Sow. First and second prize boars under six months and a few other choice boars and Gilts by same sire. We are pricing these low for quick sale. Satisfaction always guaranteed.

Riverina Farms

Paradise Road

Modesto, Cal.

Bernstein's Ranch

for

Poland-China Hogs

100 Head of Youngsters For Sale

W. Bernstein, Hanford (Kings County) Cal.

Grape Wild Farm Berkshires

18 Head Entered, 24 Ribbons Won—7 Firsts, 2 Championships, 1 Grand Champion.

Herd Boar, GRAND LEADER, Grand Champion. Judge Scott says: "One of the great boars of the breed!"

A. B. Humphrey, Mayhews, Cal.

Rancho Rubins Herd Durocs

Won { 2nd on Senior Yearling Sow
6th on Under Year Boar
1st and 7th on Under 6 Months Sow
Junior Champion Sow
Reserve Grand Champion Sow

Weaned Pigs, Gilts Ready to Breed and Service Boars For Sale

Elmer Lamb. Ceres, Calif.

Model Herd

Berkshires

Herd Boar Twice Grand Champion of Nevada

Weaned Pigs a Specialty. A Few Bred Gilts For Sale

Descriptive Catalogue on Request

J. L. Gish, Laws, Cal.

Taxpayers "13"

World's Best Duroc Boar

Won First Junior Boar

Won First Senior Boar

and GRAND CHAMPIONSHIP

Rucker & Coppin, Fair Oaks, Cal.

Reserve Champion

Large Type

Poland-China Boar

I. B. A. Wonder, 218975

Ten Head Shown

Eleven Ribbons Won

65 Head For Sale. Write to

W. A. Young

Lodi, Cal.

Buy Prize Winning Poland-Chinas

Some Extra Bred Boars That Will be Fine to Head Your Herd. Will Sell a Few Young Sows.

Write to

W. D. Trew hitt, Hanford, Kings County, Cal.

Grand Champion Sow "Sioux Queen"

Wins in the Best and Biggest Show of

Hampshire Swine

West of the Rocky Mountains

Showed 30 Head, Took Many Ribbons

W. T. Gatton, Gardena, Cal.

Prize Berkshires

Entered 12—Took 16 Ribbons

One First and Reserve Champion

7 Second Prizes

2 Third Prizes

1 Fourth Prize

2 Fifth Prizes

2 Sixth Prizes

Thatcher, Ennis & Williamson, Riverside, Cal.

Grand Champion Herd

Hampshire Swine

26 Head Entered: Won 10 Firsts, 7 Champions, 4 Seconds, 3 Thirds, 4 Fourths, 5 Fifths, 1 Sixth, 1 Seventh

Best Specimens of the Breed

Manley & Co. Lyons, Nebraska

Robin's Ruby Wins First White's Berkshires

Win First and Fifth on Aged Sows

A Few Fine Bred Late Spring Boars For Sale

Weanlings a Specialty

F. W. White

Elk Grove, Cal.

All Sales Satisfactory or
Money Refunded

Twenty Years of
Careful Breeding

Lake Side Stock Farm

Geo. V. Beckman & Sons

Importers and Breeders of

Registered Poland-China Hogs

Lodi, California

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 20

LOS ANGELES: THURSDAY, NOVEMBER 11, 1915

One Dollar Yearly

Hogs and Sheep at P. P. I. E.

Because of Quarantine Only Animals from West of Missouri River Admitted, Much to Disappointment of California Breeders. Many Compliments by Eastern Breeders for the Showing of Stock of High Quality by Coast Exhibitors.

THAT great hog state, Iowa, has 8,220,000 hogs; California with far better conditions and greater possibilities requires exactly the same figures to enumerate her hog census—excepting she cuts off one cypher; that is, has one hog where Iowa has ten.—Prof. Thompson at the banquet.

California imports annually in excess of \$75,000,000 worth of meats and packing house products, and to pay this great sum requires all that is brought to the state by our wonderful fruit crops.—D. O. Lively at the banquet.

The banquet was tendered to judges in the swine classes at the Panama-Pacific International Exposition and to other swine breeders from Eastern states by the California Swine Breeders' Association. It was held at the Inside Inn on the exposition grounds and at the same time in the same great dining room, but separated by a screen, the sheep and wool breeders were serving another banquet. The worst of it was, from a hog man's standpoint, the sheep men "had it on" the swine raisers for the main course of the "feed" was roast lamb—mint sauce and all—without a hint of juicy roast pork. Never a word of complaint, however, for all the hog men were too happy to complain over good mutton.

Mr. Thatcher of the Thatcher, Ennis & Williamson Ranch of Riverside County acted as toastmaster and was most happy in his hits on the "boys."

Prof. Mumford of Illinois and judge of Duroc-Jersey class was the first speaker. He did not laud the Reds, for praise of breeds was tabooed, but the various breed partisans fairly oozed admiration of their favorites. Even when Mr. Doty, an Iowa breeder of Reds, referred to the high quality of the California bred stock shown at the exposition and he said the veins of California breeders must be filled with rich red blood and they must have worked with unity of purpose or they would not have overcome all difficulties and made such a wonderful exhibit as they have, he was called to order by Secretary McFadden of the American Poland-China Record, and of course intensely partisan to the blacks, because of his (Doty's) reference to "Red" blood even if it were in the veins of the breeders.

Several of the speakers had a friendly criticism of California's methods of fitting—or more correctly not fully fitting—stock for such a great show. It is an art and must be

studied more closely if California is to be a world beater.

Mr. Frost of Chicago and editor of the Swine World regretted the result of the quarantine which shuts out so much Eastern stock for the reason that these gatherings where Easterners and Westerners are brought together can only advance the industry and the wealth of the nation. The fundamentals of a successful industry are fitting, feeding and selling. By all means hold public sales.

Secretary Evans of the American Duroc-Jersey Association complimented the California Swine Breeders' Association, less than three years' old, on its activities which seemed to be accomplishing more than many large associations of Eastern states which are 15 and 20 years of age.

Chairman Thatcher urged the formation of affiliating associations in every state, county and town, all to the end that America, the greatest of pork producing countries, might increase its wealth, and especially that California may change the conditions which were mentioned by Prof. Thompson and Mr. Lively.—C. B. M.

COMMENT ON EXHIBITS

By W. S. Guilford

The Sheep Show

Sheepmen of the East and West have been looking forward for two years to this great world's fair show. Had it been possible for them to have all been here, not only would there have been a big show numerically, but there would have been a greater number of highly fitted, outstanding individuals than was ever before brought together.

As it was it was a splendid show, one worth going a long way to see.

Shropshire Sheep

There was a big exhibit of Shropshires; the American Shropshire Association was very much in evidence with an attractive booth, and the banquet of the association at the Inside Inn was one of the enjoyable events of the show period.

The number of Shropshires grown on the small farms of California will increase rapidly in the next few years, and it is fortunate that there are such good flocks as that of Bishop Brothers, San Ramon, from which breeding stock can be secured. Most of the first prizes were awarded to this farm, with Knollin & Finch, Soda Springs, Idaho, close competitors. C.

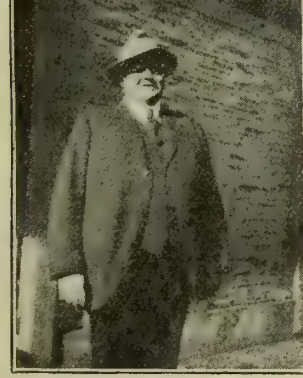
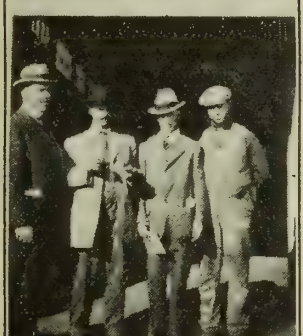
Continued on Page 470

PHOTOS IN COLUMN AT READER'S LEFT

6, Frank S. Springer, Secretary American Berkshire Association. 7, at reader's left is W. S. Guilford, whose report of the exhibits is given in this week's Cultivator. At his left stands C. J. Maurer, superintendent of the Humphrey Ranch; next to him, Prof. J. I. Thompson of the university farm. 8, A. B. Humphrey standing by one of his Berkshires. 9, F. W. White looking over the shoulder of George Murphy at one of Murphy's ribbon. 10, G. H. Armstrong, Yolo County breeder. 11, Alex. D. McCarthy of the Riverina Farms.

PHOTOS IN COLUMN AT READER'S RIGHT

12, F. A. Scott, Illinois, judge of the Berkshire classes. 13, Mr. J. L. Thatcher, standing in pen with one of his Berkshires, waiting for inspection of the judge. Mr. Ennis, his partner, at his left in the background. 14, W. A. Young at reader's left, receiving congratulations of Elmer Lamb as to his winnings on his Poland Chinas. 15, Mr. Smith, Oregon breeder of Holsteins, enjoying the fine exhibit of hogs. At his right and in the background, Mr. M. Bassett, the Poland China breeder. 16, S. B. Wright, a Santa Rosa Berkshire breeder. 17, F. A. Steel, an Oregon breeder of Berkshires.



Deciduous

Fruits

PLANT DISEASES, WITH SPECIAL
REFERENCE TO NURSERY STOCKWritten for California Cultivator
By Leonard Coates

THE object of spraying trees or plants is either preventive or curative. If plant life is healthy, it does not need a physician. To keep a plant or tree healthy it must have the nourishment it requires and must not be the subject of abuse in any form.

Many other and similar statements or postulates may be made, and probably none would be denied. In the vegetable kingdom the term "disease" refers to any abnormal condition of the individual or to the presence of any creatures (man excepted) which feed upon it. This is a rather sweeping and somewhat presumptuous assertion. We pay \$5 for a canary and put it in a cage where it is greatly admired. Outside, if it eat a cherry, it is a pest and is promptly shot.

An ill-fed or neglected tree invites disease as surely as a poorly nourished or dirty chicken encourages lice. It is generally the abnormal "diseased" condition which is "attacked," not the plant itself, although the latter may suffer in consequence. Any observing horticulturist knows that a feeble or ill-nourished tree will be attacked by insect pests or fungus or other disease before its stronger growing neighbor, and that an old tree in the orchard in which has been inserted some buds or grafts will apparently be singled out for attack by numerous pests. Again it is the abnormal condition which is the real subject of attack. Every tree

or plant then should be kept in the healthiest possible condition.

In the Nursery

In California there is less danger of plants being diseased than elsewhere for the reason that stock, especially fruit and deciduous trees generally is "cleaned up" more frequently, simply because after one or at the most two years, it becomes unmarketable because too large. The "survival of the fittest" is an inviolable rule in the nursery. Weaklings are pulled up and destroyed just because they are unsaleable. If he raises inferior stock he cannot, as with other farming commodities, box or bag it and send it to market to fetch what it will. Nursery stock is grown openly, inspection always being invited. It is officially inspected while growing at least once a year, again by the nurseryman's expert while being dug; again at the packing house, and once more at the point of destination.

In the warmer parts of the state young deciduous stock is often attacked by mites or red spider, unless kept growing thriftily. In this case dry sulphur is useful, or a spray which carries sulphur in solution, but is so compounded that it will not injure the foliage. If leaf eating beetles or caterpillars should appear it may be necessary to spray with a lead arsenate. Trees when dug, which are found to have the roots affected with aphid or crown-gall are promptly destroyed. In the midst of the rush season, when the days are short and dark, when stock is being dug and shipped and new stock planted, it would be impos-

COMMUNITY COOPERATION

R. V. Holland



DO you fully realize what the community in which you live means to you individually?

You hear of wonderful commercial, social, educational and religious advantages, of fine stores, beautiful parks and good roads in other localities, all of which means but little or nothing to you compared to advantages and conveniences offered you at home. You are affected only by prevailing conditions in your community, where you are benefited by advantages and must suffer for lack of them.

Every one is more or less proud of the community in which he or she lives, and justly so. However to me the height of inconsistency is personified in people who pretend to be deeply interested in local conditions and at the same time deliberately do those things that tend to retard the development of their home communities.

Those people who proudly boast of the advantages offered by their home towns as desirable places in which to live and then refuse to extend local merchants their patronage are as ridiculous as the restaurant proprietor who eats "outs."

It may be a fact that your local stores are not as large or as handsomely equipped as some of the big city stores, but you will agree with me that your merchants cannot possibly enlarge or improve their business beyond the extent justified by the amount of patronage accorded them.

If you are interested in bringing about better local shopping facilities it is squarely up to you and other residents of your community to patronize home merchants, thus keeping your money at home insofar as possible where it will circulate in various channels for the improvement of the community.

There are only two possible reasons why persons should remain in any certain town or community: their duties demand it or they simply like to live there. Isn't this true in your case?

In either event it is to your distinct advantage to do everything in your power to assist in improving local conditions. The community belongs to you and your neighbors, and you are necessarily governed by conditions as they exist.

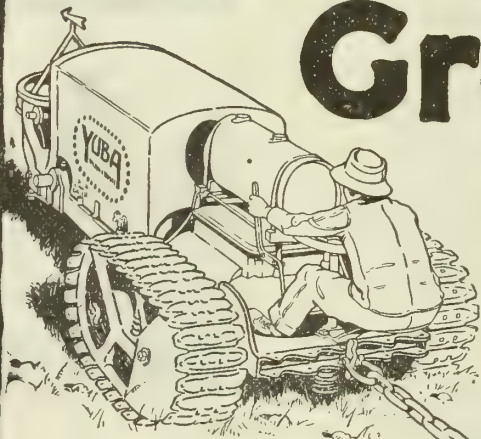
A prosperous community is in every instance a desirable place in which to live as it affords its residents advantages and conveniences to the extent of its prosperity, which invariably is limited to and controlled by the amount of local commercial activity.

sible, under existing conditions, to prevent some imperfect or diseased tree from being occasionally bundled up and shipped. Hence the necessity of inspection at the point of destination, which works a hardship mainly upon the purchaser. Thorough inspection at the packing house by qualified and well paid men is of course the only sane and safe method. After

that there should be no further overhauling and inspecting.

The care necessary to keep evergreen plants or trees perfectly clean or free from any insect pests is considerably more than with deciduous stock, but the preventive measures are the same, being simply the exercise of continual vigilance to keep every plant

Hitch Your Farm to Greater Profits



Pull it up into the Profit-maker's Class

Where the investment and the work pay big—where every advantage is taken of nature—where time is made to count in your favor—where the efficiency of modern machinery replaces time-worn methods—where the Ball Tread Tractor levels difficulties and obstacles, plows deeper and cultivates better—where the farm is run like a business—where money saved is money made.

The Yuba Ball Tread Tractor is compact and strong, powerful and reliable. The Ball Tread Tractor is adaptable to a hundred uses—on the farm, the orchard, the road, the forest, the desert—wherever motive power is needed.

THE YUBA
BALL TREAD TRACTOR

 THE YUBA CONSTRUCTION CO.
Department B15

 433 California Street,
San Francisco, California

Gentlemen:

Kindly send me a copy of your booklet, "The Yuba Ball Tread Tractor."

Name

P. O. Box

Town

State

Size of Farm.....acres.

CHECK MAIN CROP RAISED

Fruit..... Rice.....

Grapes..... Alfalfa.....

Grain..... Hay..... Hops.....

Built by the best engineering skill obtainable, combined with high-class workmanship and expensive materials—the Yuba Ball Tread Tractor has gained a reputation for low operative cost and freedom from breakdowns that is second to none.

THE YUBA
CONSTRUCTION CO.

Factory at Marysville, California

 433 California Street
San Francisco
California


growing vigorously and supplied with the food and moisture it requires.

Fumigation is only advisable in exceptional cases in the nursery. In other words, no plants should ever be allowed to get into a condition requiring such treatment. Young evergreen plants differ very much in their ability to go through this process without injury the "last state being often worse than the first". If a serious pest should attack a lot of nursery ornamentals, the infestation having been overlooked, it is both cheaper and better to burn the whole lot. If the stock is scarce and very valuable, the better method is to prune heavily, even to denuding of all leaves, and use strong soapsuds and a brush.

Kerosene stock emulsion and nicotine should be kept on hand as either one may have to be used at almost any time.

Birds are a great factor in the reduction or control of injurious insects and in equal proportion are cats an indirect cause of the spread of insect pests. Gophers are readily kept in check or practically exterminated by the very sure use of traps, carbon bisulphide, or at certain times of the year of poisoned bait. "A yellow throated warbler will consume 10,000 tree lice in one day; a scarlet tanager has been watched closely and seen to devour gypsy moths at the rate of 35 a minute for 18 minutes at a time," says Mr. Dobson of the Illinois Audubon Society.

Much more attention should be given to a study of beneficial insects, and birds.

CALIFORNIA ASSOCIATED RAISIN COMPANY BULLETIN

Fresno, Oct. 30, 1915.—As undoubtedly nearly every grower is waiting to receive financial statement for the crop of 1914, we desire to say that it is necessary for the growers to consider that the books are closed on October 1, and to make up 6000 accounts and notes to cover the same requires a large force of help and takes some time.

We are, however, pleased to announce that within the next few days accounts with payment attached will be mailed to every grower, and there is to be distributed over \$408,000.

In a general way we may congratulate the growers on the success we have met with in disposing of all of the 1914 crop at a time when it was known that we would produce this year the largest crop of Muscat raisins the state has ever produced. This success in disposing of last year's raisins is attributable to European conditions and also to the advertising and salesmanship employed to increase consumption throughout this country. We of course have had to sell in Europe at considerably lower prices than in this country, owing to the excessive cost of transportation and insurance to get our raisins delivered on the other side, and have therefore had to absorb part of this excessive cost of transportation.

The European demand is yet good, and better prices are obtainable. Other foreign countries, such as Canada and Australia, are also being supplied with raisins by this company, and the demand in the United States is better than the management had anticipated.

The financial condition of your company is also in better shape than it has been since its organization. As we have endeavored to meet our obligations when due, we feel confident in saying that we now have the confidence of all of the banks in this state and also in the East.—California Associated Raisin Co., James Madison, Vice President and Manager.

A GENTLEMAN

In one of our exchanges we note the following definition of a gentleman, which is so good that we here-with publish same:

The word "gentleman" is defined in this way: A man who is clean both inside and out; who neither looks up to the rich nor down on the poor; who can lose without squealing and win without bragging; who is considerate of women, children and old people; who is too brave to lie, too generous to cheat, and who takes his share of the world and lets other people have theirs.

FORTY Horse Power 7 passenger FOUR \$885



The ONLY car at less than \$1000. with—

—a 3 $\frac{7}{8}$ -inch bore x 5-inch stroke, FORTY Horse Power motor;
—plenty of ROOM for SEVEN passengers;—34x4 Goodrich Tires;
—finish put on with 25 body-finishing operations;—FULL-floating Rear Axle with TWO Timken Bearings in each hub;—112-inch wheel-base;—complete equipment of Timken Bearings;—upholstery of the finest, genuine, hand-buffed, semi-glazed leather;—and a RELIABLE battery ignition and lighting system tested on more than 150,000 cars.

These are details of design that you can find perhaps on many cars—but ONLY on this Studebaker 4-cylinder car at \$885 can you find them ALL. In power, size and quality it stands supreme. For Studebaker has set a new standard in 4-cylinder cars. And this is the ONLY 7-passenger, 4-cylinder car with a 3 $\frac{7}{8}$ -inch bore x 5-inch stroke, FORTY Horse Power motor that has ever been offered in America or Europe for less than \$1,000.

That name of Studebaker alone is enough to satisfy you of the GREAT value of this FOUR. For you know, as your fathers before you knew, the sterling quality that name stands for. But we urge you to see the car itself—for any man who knows cars will at once recognize the GREAT superiority of this Studebaker in POWER, size and quality. See the car at your dealer's—have a demonstration on the hills—and write today for 1916 catalog.

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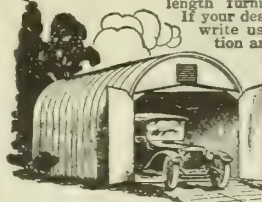
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CITRUS CANKER

The seriousness of the citrus canker situation is now fully appreciated by all citrus producing sections. The Gulf states have been fully aroused for some months. Florida's loss is already appalling. The department of agriculture is being appealed to and an effort will be made to induce action by congress in the appropriation of a special fund to bring immediate relief work or at least point the way for action on the part of states. Meantime there has been organized in Florida the Citrus Canker Committee. Mr. D. C. Gillett, chairman of the committee, writes the following letter addressed to all growers of citrus fruits:

"This is a call to arms! Citrus canker will destroy every orange and grapefruit grove in Florida, as well as Alabama, Louisiana, Mississippi and Texas if it is not stopped, and there is only one way to stop it—secure an appropriation from congress large enough to enable us to buy and destroy groves in the danger zone.

"Citrus canker is in 16 counties in Florida; from Santa Rosa in the northwest to Dade in the southeast, and from Volusia in the northeast to Hillsborough, Pinellas, DeSoto and Lee in the southwest. There is every probability that every county in the state is infected from suspected nursery stock shipped from Miami and McClelleny.

"Do not think this is not your fight. Citrus canker comes as a thief in the night. It may be in your grove tomorrow.

"Do you know any congressman in the United States well enough to write him a personal letter? If you do, write him today. Send us his name and your name and keep on writing at stated intervals until you secure a favorable expression from him. Send us copies of your letters and replies.

"If you do not know any congressman intimately but have a personal friend who does know one, write him a letter and ask him to use his influence in support of the federal appropriation for the extermination of citrus canker from the United States at the next session of congress.

We must get federal aid or we are ruined—this is not a time for hesitation.

"In case of war men are ready to sacrifice their lives for the protection of their homes and country, and we say to you that we must in this case show the loyalty that we would in war, for it is war! And defeat in this means that there is no citrus industry in Florida."

Mr. Gillett also writes to the editor: "We are going after it with a spirit that knows no failure. Alabama, Louisiana, Mississippi and Texas are in the same plight as Florida and enthusiastically supporting our efforts. In several of these states the congressional delegation has already been pledged as a man to our cause. While California, Arizona and Georgia have not yet been victims of the disease they are in imminent danger and the growers know it. Citrus canker is no respecter of state borders, and the more evil its ravages in our states the greater the peril to your own citrus interest. California, Georgia and Arizona growers and commercial bodies are giving us much assistance."

While the citrus canker is sure death to the citrus trees of this and seven other states and must be eradicated with federal aid, it is not dangerous to human beings.

The only favorable thing that can be said in connection with citrus canker is that it is harmless so far as animal life is concerned.

To help preserve this billion dollar citrus industry in which citizens of this state have so vital an interest, you should at once urge your congressman to vote for a federal appropriation to clean out this pest.

For the protection of the important

citrus fruit groves in this state the citrus canker which has already attacked some of the best trees in five other states must be eradicated from all states simultaneously.

The growers in this state must get their congressmen to support and work for an appropriation by the United States government to completely wipe out this pest which is spreading alarmingly and if unchecked will completely destroy the citrus industry.

Already citrus canker has gotten beyond state or local control. It is a national question and one with which the federal government will have to deal. It involves property interests in nearly every state in the union, warehouses, shipping facilities, and so on. It is going to influence the cost of living unless it is stamped out, and the people themselves in the citrus fruit belts seem unable to cope with the situation. They are sacrificing some of their best trees, they are doing what they can to hold the epidemic in check, but they are not able to show such progress as gives any hope.

Naturally they are appealing to the federal government to come to their aid, and in several communities the government has its experts at work. But still more heroic efforts will have to be made if the great citrus fruit industry of the United States is to be preserved.

This surely can be done if the federal government can be brought to see its duty, and do it.

The Phoenix Chamber of Commerce has: Resolved, that the Chamber of Commerce, Phoenix, Arizona, on behalf of the citrus industry of the state of Arizona and the citrus industry of the whole United States does hereby urge the appropriation by congress of sufficient funds to enable proper protective and eradication methods to be carried out to the end that the disease may no more exist in this country, and be it further

Resolved, that we endorse the ef-

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forts of the citrus canker committee of Florida in its efforts to secure the cooperation of the federal government in the eradication of this citrus disease.

THE CITRUS YEAR

On the market page may be seen details of the year's shipments of citrus fruits. The aggregate is 46,685 cars, or somewhat less than the shipments of the preceding 12 months. The year opened rather discouragingly. There was the biggest apple crop ever marketed; there was a depressed condition of the fruit markets; in fact, the general outlook with all kinds of business, confronted with a world war, was discouraging; then Florida offered to the country by far the biggest crop she had ever marketed since her great freeze; the Christmas fruit struck a spell of weather in all parts of the East; oranges were frozen solid in the cars in transit, and for weeks afterwards damaged goods were offered in all markets; early January brought an electrical wind to California that damaged and lowered the appearance at least of many oranges which were later shipped; the heavy rains of February with comparatively warm weather furnished a series of circumstances which had a fearfully depressing effect.

March 20, which was orange day the United States over, marked a turning point in conditions. Directly, that day aided in clearing the markets of a vast quantity of fruit, and that, with other factors, made a more satisfactory market which held from that day on, and by the time the Valencia season opened a most healthy condition prevailed, and to-day the orange has made a place for itself in the markets of the country as has no other fruit, unless possibly it is the apple.

The greatest advertising campaign ever carried on for any fruit has been conducted. Another year this will be even greater, and a crop somewhat shorter than that of last year and with more satisfactory condition of the financial markets of the world, a much smaller crop of apples commanding a much more satisfactory price, and many other conditions, especially the decision of the bureau of chemistry of the department of agriculture to stand by the former ruling demanding the eight to one test, all go to show that the returns to the grower will be far better. In addition Florida's output the coming year will perhaps be three-fourths of last year's—that as to oranges. The grapefruit crop will not be over 50 per cent of last year's. Its greatest marketing organization has a comparatively small proportion of her fruit under its control, but it is exerting a steady influence.

The early November rain is also reassuring. The orange grower always dreads the cold winter; nevertheless the wise grower is preparing for frost protection.

Mr. Weldon's estimate of various orange producing counties: Fresno, 65 per cent of a crop; Kern, 50 per cent; Los Angeles, 80; Orange, 90; Riverside, 50; Sacramento, 100; San Bernardino, 70; San Diego, 80; Santa Barbara, 100; and Tulare, 70. Lemons run from 75 to 100 per cent of normal crop.

LOS ANGELES COUNTY FARM BUREAU.

President J. H. Norton of the Gardena Valley Chamber of Commerce is working for a farm bureau in Los Angeles and is sending out the following circular:

"You are respectfully requested and urged to send an agricultural representative or representatives of your organization to meet with agricultural representatives of all other county civic or agricultural organizations. The meeting will be held in the assembly room of the Los Angeles Chamber of Commerce, Saturday, November 20, at 10 a. m. The purpose of the meeting is to organize a Los Angeles County farm bureau and secure a county farm adviser.

Under the provisions of the Smith-Lever bill, which passed congress in the spring of 1914, money is appropriated which, together with state and county appropriations, creates a fund for employing county farm advisers.

NOW THAT--

Plowing Time is here, we're anxious to give you a demonstration, showing what "BIG BULL"—a powerful Tractor and Portable Engine—can do for you and your farm.

Phone, call, or write us, and we'll arrange to put "Big Bull" through its paces.

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20 Horsepower at Belt

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Ask to see "Big Bull" perform. Does all traction work around the farm—also acts as a many-purpose, labor-saving portable engine.

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French, Imperial and Sugar Prune, Bartlett and Other Pears, Apple, Peach, Almond, Cherry, Grafted, Walnut, and other trees. Stock pure, clean and first class at bargain prices. Write or wire your wants, and ask for special prices.

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Hop Growers who have taken advantage of our free service department have found it profitable. They have made money through our advice. We have shown them how to increase the number of bales per acre. What we have done for others we will do for you. Write us fully and frankly. Let us know the exact conditions you are working under. Send a sample of soil and we will tell you how we can help you. You will not be obligated in any way. We want every Hop Grower to know all about



Gaviota Fertilizer

How it increases land values while increasing the land's yield. We want to send you positive proof of the wonderful increases it has made. How it feeds the crops and improves their quality.

Read what Hop Men Say:

From a Grower in Sonoma County:—"After using HOP Brand for two years, I am thoroughly well satisfied with results both in production and quality."

Another Sonoma Hop Grower:—"I began using your HOP Fertilizer in 1911 and increased my yield from 180 bales to 378 bales."

From Sacramento County:—"I purchased HOP Fertilizer last year and have had splendid results."

Still Another From Sonoma County Says:—"HOP increased my crop from 8.36 bales per acre to 13.14 bales."

We will furnish the names of these men on application.

"The Care and Feeding of Crops"

is a little book that tells you in plain English some valuable truths about the correct way to put back into the soil those elements which the crops take out. It tells you how to increase the size of your crops and how to make your land more productive. Write today for a copy free.

THE PACIFIC GUANO & FERTILIZER CO.
802 Security Building San Francisco, Cal.

The Lawn and



Flower Garden

MAKING MINIATURE TREES Written for California Cultivator. By Ernest Braunton.



FOR all time the report has been current that the Japanese have a secret method of growing trees in miniature, but such is by no means the case. All that one needs is to exercise extreme care and have a patience that might be likened to that of the man of the land of Uz, of whom we hear so much as the world's most notable example in the exercise of that homely virtue.

We will suppose we desire a miniature oak or similar tree having a large seed. For an oak an acorn is planted in an orange skin or similar receptacle. With a spoon scoop out the flesh from an orange, let the skin or shell dry somewhat and then fill with rich soil, placing the acorn precisely in the center of the soil mass. Put the orange in a warm, sunny position and water every day. Soon after the first shoot appears the roots will break through the orange skin and must be cut off as fast as they appear. The tree will grow into a miniature tree but a few inches high and will so continue. At the end of the first year the habit of dwarfness has become fixed and you have a perfect tree. When the roots cease to grow through the orange skin the dried or exposed ends are varnished over, orange and all, and when the latter is falling to pieces the little tree is shifted into a miniature pot and continues for all time to be a captive dwarf, for it never has a chance to develop. The habit is so fixed in the first year that the tree makes no breaks for liberty as nearly all animate prisoners do. In the years to follow the tree may be trained to a gnarly shape or any other that is desired.

Royal Foliage Plants

At the Broadway flower show in Los Angeles held during the last week in October there were displayed some of the finest foliage plants ever seen here. Among them were two species of *Carludovica*, a palm-like plant that is as full of leaves as any plant could be, one of most unusual tropical luxuriance yet hardy enough for house use.

In the same collection are several fine cycads of gigantic size that would put to shame the finest specimens of the nearly-related sago palm. There are also many plants of high decorative value that are new here but will soon be on the market, for their unquestioned value will find a market for them everywhere. To be sure, the giant specimens will not be obtainable by many of us, for this fine collection belongs to H. E. Huntington, but his superintendent, Wm. Hertich, assures me that small plants of these rarities may be obtained at low cost and in a few years will be available to all.

Popularity of Dahlias

From the many fine exhibits now to be seen from San Diego to San Francisco it is evident that the popularity of the dahlia is on the increase. For years these flowers have been so superb that I hardly expected a continuous improvement, but I am fully impressed with the excellence of this season's product and believe the dahlias of today are finer than any I have seen before. One change they have undergone of late is the same one that has made many lately introduced roses popular—the superb colorings in sunset and coppery tints of all that could come under a color generally designated as salmon. Some of them run to light shades and may be called copper-tinted buff. Others have a depth of color known as coppery red and all have that luminous sunset glow.

Shrubs for Massing

Leptospermum may be a hard name

to thrust on a plant but we have no English name for it at present. It is closely allied to the eucalyptus, yet has tiny leaves resembling those of the boxwood and myrtle. So marked is the lack of ambition for rising aloft, as is common to their cousin eucalypt, that these lowly shrubs are always broader than tall and for that reason are splendid subjects for massing in thicket-like formation, especially for hillsides, for they demand as little water as any of the eucalypts and are fully as decorative as the best of their altitudinous relations. No mistake will be made by planting freely of *leptospermums*.

That Wild Garden

Have you that plat ready for sowing that is to be your wild garden this winter? It is nearly time for sowing native and other seeds in broadcast form for winter and spring flowering. Be sure to wet down well and let the weeds start. Destroy these and then sow and rake in the flower seeds. While you may and doubtless will do as you please in the matter I would strongly advise sowing only native California wild flowers. They are better adapted by nature to the needs of our soils and climate, are as beautiful as any the world affords, cheap as any others, and we should all take a pride in growing plants and flowers exclusively Californian.

Active Garden Season

The active season of gardening is now at hand and all should get busy with such vim that it might be termed soul-stirring soil-stirring. There is so much to do now that one should have a competent guide for all gardening operations. The Cultivator's new book, *The Garden Beautiful*, was written after 28 years' practical experience by the author in all phases of gardening in this state and can be relied upon as a faithful and accurate guide. The low cost of this instructive little volume places it within the reach of all, and I am satisfied that no one who buys it will ever regret the investment. See advertisement of it elsewhere in this issue and get one now, for the longest chapter is a calendar of gardening operations that tells fully what to plant or sow each month, how to care for same and what general garden work to do at any and all seasons.

Care for Roses Now

Roses of all kinds are now growing unless they are receiving no water, and it will be found best to feed and push them along by every means in your power. Fertilize heavily and water freely, stirring the surface soil lightly but often for several times, then turn it over somewhat deeper and mulch heavily with strawy manure. This will feed the bushes well and provide a good carpet to walk upon during the rainy season. It will also prevent weeds from growing and generally result in producing the finest of rose blooms. If your roses have not been watered and are not starting into growth I would not bother with them at present. Let the rains start them and then prune somewhat in order to rid them of thin and unproductive wood. If rains come late the blossoms may escape freezing weather. Those now growing will bloom before frosts come.

Control of Bermuda Grass

After the first rain Bermuda grass will grow but little until late spring for it is native to the tropics and in cold weather is practically dormant in California. Then comes the best time to gain the mastery of it. Rake out, cut off, or pull all the Bermuda grass you may easily harvest by any or all means suggested. Then sow and rake in seeds of white clover. These will respond at once and the crop will grow all winter. By spring you will have, to all appearances, a luxuriant growth of pure clover lawn. This will



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Built along advices of Horticultural Experts and prominent growers, to do "high pressure" work with wonderful results after fog-sprays and fumigation had failed.

Own your own High Pressure Spray Rig and be in a position to SPRAY WHEN YOU SHOULD. The right time to spray is at period of incubation or hatching of Tree Pests, don't compel yourself to rely on hired spraying or fumigation.

Write for Circulars "S No. 2".

Smith-Booth-Usher Company

228-238 Central Ave.

Los Angeles, Calif.

so shade and thereby cool the soil that Mr. Tropical Bermuda will not be able to start until quite late in spring and will scarcely show at all for a couple

of years. Try this method and be convinced that Bermuda grass, while hard to eradicate entirely is nevertheless easy of reasonable control.



Poultry for Profit



"SELECTING THE LAYERS"

By A. B. Stickney

Although I have been reading poultry literature for thirty years or more I have never seen a series of contributions extending over so long a period which maintained so uniform evidence of common sense applied to the poultry business as that displayed by your poultry editor. It is therefore with the idea of supplementing rather than differing that I should like to comment upon the article, "Selecting the Layers," which was contained in your issue of September 23.

Great emphasis is laid upon the comb, and rightly, too; for it is the chief indication of the good layer. Yet it is not infallible. At six months old pullets will occasionally show a flourishing comb, but if you pick them up you may find them light weight and with a breast the shape of an axe. You must get rid of these pullets quickly for they will be the first to catch any contagious disease and spread it among the flock.

The wedge shape is not by any means a sure indication of the good layer, although it is one of the indications, and a good one. I have much regretted that you, Mr. Editor, have not seen your way clear to give us the monthly reports of laying contests, especially the one now being conducted at San Francisco, and publish photographs of the high record hens. I am confident these photographs would reveal the fact that the heavy layer has more often the bullet shaped body than the wedge shaped. However, the vital point is that the hen must have the capacity somewhere, but it is not necessarily in the large end of a wedge shape. Broadness of back, even if the back is short, may indicate equal capacity of digestive and reproductive organs. The large comb and the wedge shape may be carried to such extremes as to become abnormal indications of weakness.

Mrs. Koethen rightly says all good qualities may be summed up in the one word, vigor. But how do we surely know a vigorous hen? One of our California poultry experts who has taken many a ten dollars from poultrymen for revealing his secret of the laying hen, says in a book recently published that he knows of no way

to pick out the vigorous hen. Nevertheless the poultryman must do it or fail, for it is the very foundation and the only foundation of success in the business. Not many of us even know that a hen maintains a body temperature of about seven degrees higher than the human body, much less realize what it entails to maintain that high temperature. The lungs are the chief and the vital organ in accomplishing it. The hen must consume an enormous quantity of pure air and convert her feed into fuel rapidly to do it, and the air she takes into her lungs is, like the electric current to a motor, the origin of the power that digests and assimilates the food rapidly. Consequently she breathes rapidly and deeply. Now the lungs are located each side of the back bone just back of the shoulders. Pick up your pullet or your hen and grasp her back between your thumb and fore finger. Is she broad for her size all the way from her shoulders to her hips? If not she will never be a vigorous hen. For her lungs and lung capacity are small and you don't want her. She may even have the general wedge shape, yet her lung capacity be small. That is why you will, in my belief, find that the heavy layer has generally a round, broad backed shape.

MILCH GOAT RECORD ASSOCIATION

The milch goat breeders held their annual meeting at San Francisco Thursday, November 4. There was discussion regarding registration of pure breeds; also, owing to conditions which prevent receiving goats from Switzerland or other European countries, it was urged by some that there be a record made of grade goats when it could be shown that they were produced by a milk strain showing at least 15-16 pure blood, in time this to be known as "California" or "American" or some other breed of milch goats.

In the absence of President Cooke Mrs. Winthrop Howland presided. Secretary J. C. Darst was present. Officers were re-elected for the coming year. They are: President, Prof. Francis K. Cooke, Winnetka, Illinois; vice-president, Mrs. M. B. Bruggerman, Beaver Falls, Pennsylvania; secretary-treasurer, J. C. Darst, Dayton, Ohio. The board of directors in addition to the above is made up of Winthrop Howland, Redlands; D. R. Schmidt, Hannibal, Missouri; W. H. Miller, Carlyle, Pennsylvania; A. C. Ball, Pontiac, Illinois, and Dr. E. S. Gordon, Cranberry, New Jersey.

CALIFORNIA SWINE BREEDERS' ASSOCIATION ACTIVITY

At a meeting of the California Swine Breeders' Association directors held at the Panama-Pacific show it was decided to hold a meeting in Sacramento January 26, with a banquet that night, followed by a consignment sale of all breeds January 27, 1916. One hundred to 150 animals will be sold.

There has been great interest in the affairs of this association during the past six months and this big sale will be one of the events of the live stock year in California.

A BERKSHIRE BREEDER

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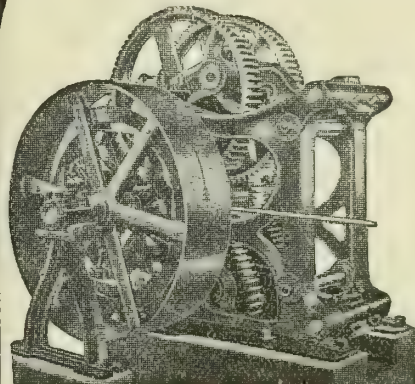
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NO. 103

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Questions

THE EDITOR

and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Feeding Citron Melons

Have a large number of citrons which I wish to use for hog feed. What is the best way to feed them? Are they a fattening food? Have been chopping into fine pieces and feeding in the swill. Is this better than putting them on the ground? What is the best way to treat them to keep during the winter?—Subscriber, Creston.

Some prefer simply to break open and allow the hogs a chance to eat them as they like, maintaining that the animals are less likely to choke than when the melons are cut up in pieces, especially if the pieces are left rather large. If chopped they should be rather fine. We would not feed in the swill. Think it would be better to feed in the trough or on a clean feeding platform. As to storage, think the only point is to store in the shade where they will be kept cool. Many prefer to leave in the field where they are grown, hauling and feeding direct as needed.

Salt Bush

Please tell me the name of the plant I am sending, which is relished by stock both as a green growth and when cured. It grows with or without moisture. Would like to know its value as a cover crop or forage plant.—Subscriber.

This is Atriplex semi-baccatum, or the common Australian salt bush. It was introduced to this country from Australia and has been very generally distributed. It is of considerable value as a stock food.

Sex of Ducks

Please let me know how to tell male and female ducks apart. How old are they before one can know? What is the best age for a drake to mate with young ducks hatched June 1? My ducks are Pekins and I think the drake is a Mallard cross.—Subscriber, Santa Maria.

It is difficult to distinguish between male and female ducks before they are mature. As they grow older you will notice that among pure bred Pekins the males have a little curl of the tail feathers that the females do not have. The males are also heavier. Whether the same would be true of a cross such as you describe I do not know. Drakes and ducks of the same hatch are usually mated together, but the older the mothers the stronger and larger will be the ducklings. If you want to begin hatching in January it would be better to get eggs from older stock. I think you could hatch from those by April or May.—J. A. K.

Dodder Not Poisonous

I have noticed it has been claimed the goats used by the department of agriculture to keep down the weeds and brush on the fire trails or breaks in the mountains have died because of eating dodder or love vine which grew in the chaparral. I have dodder in my alfalfa and would like to know if there is any danger from it?—Subscriber, Blythe.

We have taken this up with several and do not find anyone who has ever found any ill effects from feeding dodder infested alfalfa to stock. We do not believe there is any harm in allowing stock to eat it.

Aphis

Please give remedy for aphis on cauliflower.—Subscriber, San Gabriel.

Only contact insecticides will work with these pests as they belong to the sucking class. Tobacco extract is the cheapest and best. Use at the rate of one pound of commercial tobacco extract to 100 gallons of water.

State Highways

Answering a Tulare County subscriber who wished to know as to the good roads which have been built with the \$18,000,000 of bonds which were sold a few years ago we have the following from Engineer A. B. Fletcher in answer to our request for information. Mr. Fletcher writes: "To August 1, 1915, about \$11,000,000 of the \$18,000,000 bond issue had been expended. In the state up to October 5 there have been about 1450 miles of road laid out as state highways. Of this mileage there are about 575 miles under construction and about 715 miles of road have been accepted by the department of engineering as completed. In your letter you refer to Santa Barbara County. In this county there have been approximately 75 miles of surveys, of which about 70 miles have been laid out as state highways and out of this mileage about 48 miles are under construction and nine and one-half miles have been accepted as complete."

Figs Souring

Can you tell me the cause of figs souring on the trees? They are the white variety. Some have been watered and cultivated but there does not seem to be much difference. Is it the climate or do they need heavy pruning?—Subscriber, Kirkwood, Tehama County.

The souring of the Adriatic and some other figs is due largely to moist and cloudy weather. Some maintain that withholding irrigation at time the fruit is ripening proves beneficial.

Value of Molasses Beet Pulp.

How much value is added to sugar beet pulp by the addition of refuse molasses? Is it more palatable, and would the addition of molasses aid in balancing the ration?—A Subscriber.

This query was referred to Prof. F. W. Woll, of the university farm at Davis. He answers: "Beet molasses contains only 4.7 per cent digestible protein and 54.1 per cent digestible carbohydrates and fat. The ratio between digestible protein and non-protein (starchy components), is, therefore 1:11.5. Since a good share of the protein substances contained in molasses is of inferior nutritive value, being composed of organic nitrogenous substances known as amides, and of nitrates, the actual nutritive ratio of molasses is wider than indicated by this figure. Dried beet pulp, on the other hand, contains 4.1 per cent digestible protein and 64.9 per cent digestible carbohydrates and fat; nutritive ratio 1:15.8. It is evident therefore that molasses does not aid in balancing rations for farm animals nor does it add much to the palatability of the beet pulp; some animals do not take kindly to either feed at first, but when once accustomed to them they are eaten with relish. In feeding experiments with dairy cows conducted by the writer several years ago at the Wisconsin station, molasses beet pulp was found to be worth about \$1.00 more per ton than plain beet pulp. According to my experience it is in general a somewhat better feed than the plain beet pulp."

F. W. White of Elk Grove sold last week to Geo. M. York of Modesto one boar and one sow from Grand Champion Berkshire Sow State Fair 1914. He also sold at same time five sows and a boar to W. H. Bent of Ontario. Mr. White shipped some very fine animals to the Swine Congress Sale at San Francisco, November 6.

Sacramento County was represented at the Swine Congress sale at San Francisco November 6 by the shipments of Berkshire swine from the following breeders: S. S. Day, Sacramento; A. B. Humphrey, Mayhews; Markova & Latta, Elk Grove; F. W. White, Elk Grove; G. A. Murphy, Perkins.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Dog Wrecks Auto

While driving along a state highway a dog ran across in front of the machine and caused it to turn turtle, damaging it to the amount of about \$125. Have we any case for damages in this instance?—Subscriber, Elk Grove.

It has been held that a person allowing his cow to run at large in the streets of the city is liable for injury and no particular reason is apparent why the same rule should not apply to a dog, but the case would probably turn upon the exact facts constituting the accident.

State School Lands

Please tell me how to and where to make application and what it costs to get state school land?—Subscriber, Anaheim.

State school lands may be purchased at the rate of \$2.50 per acre, \$20 payable within 50 days from the date of certificate issued to purchaser, and balance with interest at rate of seven per cent per annum, payable within one year after passage of any act of the legislature requiring such payment. Also the application must be accompanied by a deposit of \$20. If deed is eventually issued this \$20 is accepted in part payment of the purchase price. The purchase may be made for no less than the smallest legal sub-division. The purchaser must make affidavit that he is a citizen of the United States or has filed his intention to become such; a resident of the state; that he desires to purchase the lands described, has made personal examination thereof, and that the lands are not adversely occupied; that he desires the said land for his own use and benefit and has made no contract to sell the same. The affidavit must also show whether or not the land is suitable for cultivation, if it is, that he is an actual settler; that he has not sought to obtain school lands, which together with the present application exceed 320 acres, or if the land is unsuitable for cultivation, not to exceed 640 acres. The lands must be all in one county. Lands suitable for cultivation are defined as such that no less than one-half of the smallest sub-division, without artificial irrigation and by ordinary process of tillage, will produce average agricultural crops. This application must be filed in the office of the state surveyor general, where it is detained 90 days for approval. During that time the applicant must appear before some person designated by the surveyor general and answer under oath such questions as may be put to him regarding his application. Upon receipt of this deposition the surveyor general may approve the application. Thereafter and within 50 days purchaser must present a copy of his approved application to the county treasurer who shall receive the amount to be paid and the fee for this certificate of purchase. Thereupon the register of public lands issues to the applicant his certificate to purchase. When full payment is made for the land upon surrender of this certificate of purchase the register causes a patent to be issued by the state to the original applicant for the land. The certificate of purchase is subject to sale or transfer in like manner as a deed.

Community Property

Where man and wife own a piece

of property bought and paid for with community money can either husband or wife sell half, the deed being a joint deed, or mortgage their half without both signing the deed or mortgage or without the consent of the other? Has either party the right to dispose of personal property such as horses, cattle, hogs, etc., and would a bill of sale on such stock signed by only one of the parties be good to hold the stock?—Subscriber, Gardena.

The husband has absolute power of disposition other than testamentary of the community property, except that he may not convey same without valuable consideration. A husband and wife may by contract alter their property relations as in this case they evidently have, but by a joint deed, as such is legally understood, each of the parties has an undivided one-half interest in the whole of the property and upon the death of one the whole of the property becomes the absolute property of the other. A joint tenant could undoubtedly without the consent of the other joint tenant sell or mortgage his interest in the property, but if the joint tenant so selling or mortgaging his interest died before the other one, the other would take the whole of the property free from any such incumbrances or transfer. Whereas if the party incumbering the property should live longest, the incumbrance or transfer would apply to the whole of the property. So it will be seen that the transaction would partake much of the nature of a gamble.

Deeds

I bought some land on contract, deed to be furnished by the vendor on receipt of last payment. Now it states in the contract that the vendor shall furnish a deed free and clear of all liens or incumbrances done, made or suffered by vendor, but this is not stated in deed. Vendor says it is not necessary to have it included in the deed as a printed copy of an abstract is furnished. Is vendor right? What is the difference between a deed and a warranty deed?

It is assumed that your deed contained the word "grant". If it does, unless restrained by express terms contained in the instrument, the law of this state is that prior to the execution of the deed, the grantor has not conveyed the property or any interest therein to anyone other than the grantee and that the said property at the time of the execution of the deed is free from any incumbrances made or suffered by the grantor or any person claiming under him. It is also provided that the said two covenants may be sued upon in the same manner as if they had been expressly inserted in the conveyance. By reason of this section of the law of this state, the reason for warranty deeds has failed so that in this state we do not use the warranty deed, which contains practically the same covenants as is implied by law in this state from the use of the word "grant".

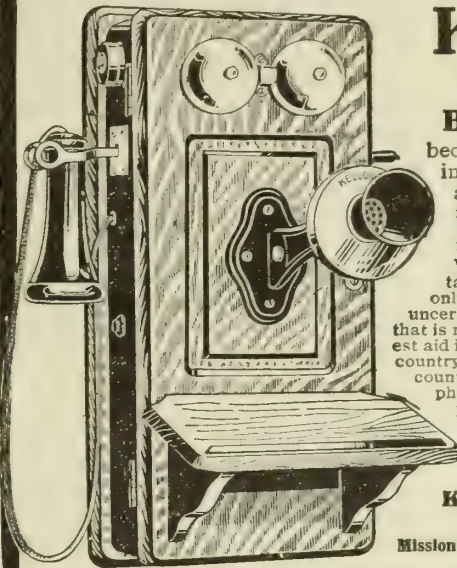
Wife's Property

Where a husband makes to his wife a grant deed of real estate that they have accumulated and earned together, along with the livestock, tools, etc. with the farm, and he recognizes it as her separate property, can she in case of sale make clear title to property without husband's signature? And in case of her death would he have any share in the estate?

A married woman can without the consent or signature of the husband convey her separate estate by deed or other instrument, but title insurance companies invariably require as a matter of precaution that the husband sign the deed. The same is true in case of a deed by the husband of his separate estate or of community property. The law gives him the right to execute such deed without the signature of the wife, but the signature of the wife is for the sake of precaution almost invariably required. In case of the death of the wife, without issue, one-half of her separate estate goes to the husband and the other half to her own relatives. If there are two or more children the husband has one-third and the children the two-thirds, but the wife may dispose of her separate estate by will and cut the husband out.

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Agriculture

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Cultivator when writing the advertiser.**HOPES DEFERRED.**

It was a dramatic moment at the banquet of the Berkshire Breeders of America when Superintendent D. O. Lively of the Panama-Pacific exposition told of his effort to build the greatest live stock show ever produced. It is several years since Mr. Lively was secured by the management of the exposition to arrange for a great exhibit. Many thousands of dollars were expended and men of the live stock department were commissioned to go to all parts of the world and secure the very best animals to be had. Then came the great war and with it financial depression. Then the foot and mouth disease startled the live stock world, and it asked: "Now will there be any exhibits at the Panama-Pacific? With a strong hand the department of agriculture took hold of the situation and almost rid the country of the dread disease. Its eradication was so nearly complete that renewed efforts were begun to produce a live stock show almost equal to the dreams of those in charge, but live stock breeders of the coast, especially State Veterinarian Keene, canvassed the situation the United States over carefully, and finally on the first day of October Mr. Keene issued his quarantine order which prohibited any stock from being exhibited which came from east of the Rockies.

This order stopped trainloads of hogs and cattle already on the road to the exposition. Illinois and other states through their legislatures had appropriated money to pay freight in order that their live stock breeders might be induced to show their very best, and thousands of head of the purest blood of the country were to be exhibited.

This meant for California breeders an opportunity the like of which had

never been offered before. Blood of the finest herds could be secured after inspection in the home state of our breeders. The quarantine order wiped out all this. It also blasted the hopes of the exposition management, and for the one man at least whose years of work had been filled with the hope of the greatest accomplishment given to any man in this department of work this was nothing less than disaster. And when he told the story of his hopes and their failure, the banquet room was still and every live stock breeder present realized more than ever the loss and disappointment of it all.

Notwithstanding the lack of these Eastern exhibits there was a great showing of live stock. It was really a Pacific Coast show. The quality of stock which the breeders of the Coast have been gathering together during the last five years saved the day and in some classes the greatest exhibits ever of stock by those particular breeds were made.

MUCH IN LITTLE

Owing to disappointment in not receiving from the mills the large size paper sufficient to run 32 pages the Cultivator was compelled to go to press last week without a couple of the most valuable articles intended

the world's greatest shows. A more enthusiastic gathering of live stock breeders was never held than that at San Francisco. Not only was there a great exhibition of live stock planned for, but efforts had been made to secure meetings of conventions of live stock breeders' associations. This brought from all parts of the country admirers of all the breeds exhibited. Many national associations held their conventions, their congresses and their banquets. The last few weeks will chronicle a wonderful uplift in the live stock annals of California, and indeed it is needed, for note the statements of Prof. Thompson and Chief Lively in the opening of the article on leader page of this issue. We need to produce more meat. Therein lies the interest in the advertisements to which we have referred. The wise farmer is producing more live stock, and we have more wise farmers than any preceding year in the history of the state.

We wish every subscriber could have been at this great exposition, not only to have seen the live stock but to have seen these great breeders filled with enthusiasm for their breeds. We give photos of many of these men in this issue.

HONOR TO WHOM DUE.

At the meeting of the Berkshire breeders held recently in San Francisco reference was made to the excellent work of Mr. A. B. Humphrey on his farm at Mayhews. When opportunity came Mr. Humphrey rose and expressed apprecia-

WHAT OTHERS SAY

HERE is a woman down in California who knows more about poultry than all the men in the state, and this, too, for that matter. Her name is Jean A. Koethen, and she has written a book which is published by the California Cultivator of Los Angeles, and called "Poultry for Profit." It costs a dollar, post-paid, and it ought to be in the hands of every one who is keeping hens. This paper has reprinted a lot of matter written by Mrs. Koethen and, because of its quality, her book is recommended. Climatic conditions in these states are so nearly alike that what is good or bad for fowls there is the same here. The price of three dozen eggs will get the volume and its purchase is a good investment.—Portland Oregonian.

for the pest control issue. They appear on the citrus and deciduous pages this week. They are written by Mr. Waterbury, who has had much experience in fumigation, and by Mr. Coates of Morganhill, whose experience enables him to talk from the nurseryman's standpoint in the matter of pest control. Likewise this week's issue is in somewhat the same condition.

Four members of the Cultivator force spent several days with the live stock at the Panama-Pacific Exposition, and the photographer, the writer and even the advertising man, all have made graphic returns to the readers of this week's paper. Many characteristic photographs, ready for the engraver, have been forced out for a similar lack of space. Soon these conditions will be corrected and we ask the patience of our subscribers, but honestly, don't you think there is a world of information packed into the few pages in this issue?

Later—And with all the effort still more of the good material is necessarily held over till another week. Even Mr. Waterbury's article, referred to above, is necessarily held out at last moment.

Also program of 47th State Fruit Growers' Convention at Visalia, November 18-20. Marketing, standardization and cooperation will be the great features. Sessions for Women, also sessions of State Association of County Horticultural Commissioners.

GOOD READING.

Some of the best reading in this issue of the California Cultivator is in the advertisements in the live stock department and on the second page of the paper. These advertisements are historical, for most of them chronicle winnings at one of

tion for the words of commendation and added: "The credit for the real accomplishment on my ranch is due to the man who is sitting by my side," and he pointed to Mr. Maurer, whose picture appears on the third page of this issue directly above that of Mr. Humphrey. Mr. Maurer is one of the efficient workers of the world and he has devoted his time exclusively to the work of building up a fine breed of animals, and the tribute paid to him by Mr. Humphrey called forth the prolonged applause of those in attendance for the employer who was willing to pass the credit on to the one really accomplishing the service.

ANNUAL HOLSTEIN SALE.

A Holstein cattle sale organization is being perfected in Sacramento under the leadership of J. M. Henderson. Others interested are F. F. Kiesel, William Morris and James McGillivray. A corporation is planned to hold an annual sale of Holstein cattle at the state fair grounds. Consignments large and small are to be accepted from anyone, but all cattle must be examined and approved by the organization's veterinarians and officers. All stock entered must be sound in every way, and the organization will stand behind the sales guarantee. The plans so far are incomplete, but contemplate an amply financed corporation, not run for profit but for the promotion of the best interests of the Holstein breed and breeders. Such an organization, once it has established the fact that its stamp of approval guarantees the worth of the animal, will be a power for good to the live stock industry and to the state of California.

We wish it all kinds of success.



If your clipper bruises an orange's skin you open the way to decay. The cut may be too small to notice—one decaying orange may spoil an entire box.

**You won't bruise fruit if you use
WISS ORANGE CLIPPERS**

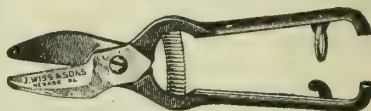
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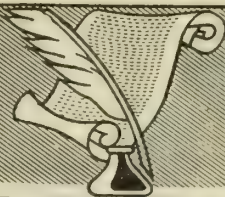
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Agricultural News Notes



of the Pacific Coast

Northern California

The Humboldt County farm bureau annual meeting at Arcata was attended by 2000 people.

The California state grange, at its recent annual convention at Oakland, elected Joseph Holmes of Sacramento, master.

S. P. Kelly of Ferndale came home from the cattle show at the Panama-Pacific bearing 12 ribbons and cash prizes totaling \$370.

Packing houses of Chico, Butte County, have been sending out an average of two cars of dried fruits per day during the last few weeks.

Olive paste has been found by the division of viticulture of the state university to be a satisfactory way of using olives too small for pickling.

The Hercules Powder Company at Pinole, Contra Costa County, is reported as contemplating the harvesting of kelp on an extensive scale, the kelp to be used in the manufacture of potash.

It is proposed to form an irrigation district at Thermalito, Butte County, comprising an area of between 5000 and 7000 acres, the main source of supply to be the west branch of the Feather River.

The Sacramento Valley Development Association has appointed a committee to lead the water grass fight in the rice fields. It is reported that during the past three years this grass has taken complete possession of more than 2000 acres of rice land in Butte County.

Central California

A movement has been started in Stanislaus County to organize a Swine Breeders' Association.

The Stanislaus Poultry and Pet Stock Association is making arrangements for a big show to be held in Modesto December 1-4.

The executive committee of the Peach Growers' Company has decided to extend organization efforts to peach growers in the Santa Clara and Sacramento Valleys.

The Stanislaus County branch of the proposed Peach Growers' Company has selected a committee to spread information as to the new organization and secure members.

The Watsonville Apple Distributors has asked Monterey County apple growers to cooperate in the securing of a farm adviser to assist County Horticultural Commissioner Volck.

California's imported egg act, passed by the last legislature, has been carried up to the supreme court in a test case brought by the secretary of the California Bakers' Association.

Representatives from all irrigation districts in the state will meet at Modesto at a date to be announced soon. They will discuss securing of legislation beneficial to irrigation districts.

Growers of the San Joaquin Valley who are becoming interested in rice culture are urged to make careful examination of their soils before planting to make sure that they are adapted to rice.

Southern California

Buena Park in Orange County is to have an up-to-date cannery installed.

Walnut shipments are heavy at Saticoy in Ventura County. The first car was sent out on September 28.

Ventura bean farmers are using their bean straw to good advantage by spreading it on the bean fields.

Santa Ana walnut orchards have been suffering from depredations of what appears to be an organized gang of thieves.

Oxnard, Ventura County, will have its two rural routes merged. Auto delivery will be substituted for horse and wagon.

The old olive factory is being repaired at Pacoima in the San Fernando Valley to be ready for this season's olive pack.

Walnut packing is in full swing at the packing house of the Anaheim Walnut Association. This association now has a membership of 75.

The Rankin Ranch at Brawley last week received 20 cars of feeder cattle from Tucson, Arizona. More shipments are on their way to this ranch.

At the recent annual meeting of the Claremont Pomological club the following officers were elected: Charles E. Needham, president; W. O. Fritz, vice president; Mrs. B. L. Olds, treasurer, and V. V. LeRoy, secretary. The next meeting of the club will be held at the citrus experiment station at Riverside, Saturday, December 4.

The Coast

The Arizona Cattle Growers' Association will hold a convention January 10, 11 and 12.

The Western Walnut Association held its first meeting at Portland, Oregon, October 3 and 4.

The premium list of the Arizona state fair to be held at Phoenix November 15-20 offers many prizes for goats.

Sheep from the northern ranges of Arizona are being driven to winter feeding grounds in Yavapai and Maricopa Counties.

Sheepmen of Southern Idaho are reported as being well pleased with the year's business. Many report an increase in lambs of 115 per cent.

Levi Young, a Phoenix cattleman, is shipping in a trainload of 24 cars of cattle for winter pasture in the Salt River Valley. The cattle are being brought from the southern part of the state.

Following the action of the state horticultural inspector in allowing the shipment out of the state of wormy and other infected apples by "special permit," the executive committee of the Yakima Valley, Washington, Fruit Growers' Association has gone on record as condemning the action of the state authorities "in openly countenancing and abetting such shipments," and characterizing it as a "naked effort to repeal statutory law by executive order and to cast discredit upon the entire horticultural law."

POLAND CHINAS

Prize Winners

FINEST STOCK IN THE STATE, \$30 AND UP

My herd has been a consistent prize winner for many years at the best shows in California. Most of my winning hogs have been of my own breeding.

Now comes the greatest honor of all in winnings at the Panama-Pacific International Exposition.

My Herd of Splendidly Bred Brood Sows Is Headed by

HUSTLER 191721,

First prize aged boar at P. P. I. E., also first prize under six months boar at the Chicago International.

Assisted by Perfect Hustler 238209,

First prize yearling boar, P. P. I. E.

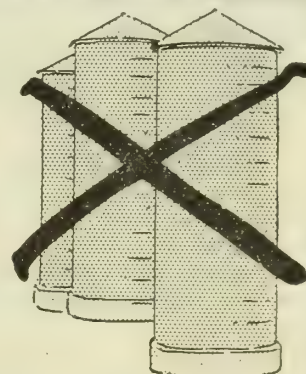
Other winnings at P. P. I. E.: Hustler's Model, first prize swine in senior class; Gold Coin 3d, 4th premium in senior pig class; Banker's Boy 1st and Chief's Victor, 1st and 2nd junior boar pig class; Her Majesty 4th, senior yearling sow; Miss Beauty, Beautiful and Lady Style, 1st, 3rd and 5th in junior yearling sow; Golden Beauty and Grand Picture, 1st and 3rd in under year pig class; Dewdrop, Gold Drop, Corrector's Lady, 1st, 2nd, 4th, junior sow pig class; in get of sire, 1st and 2nd; in produce of dam, 1st; aged boar, 1st; young herd, 1st; also premiums in exhibitor's herd, exhibitors' young herd and all barrow classes.

I breed the kind that have a high degree of quality, all the size that is necessary, and mature quickly and economically into the most desirable market hogs.

M. Bassett, Hanford, Cal.

When writing advertisers, mention The Cultivator.

"We have abandoned the use of silage altogether, altho we have an investment of approximately \$1500 in silo machinery, which will go to waste.



"We do not consider corn silage an economical feed where dried beet pulp can be obtained for \$30 per ton or less; for the simple reason that it is necessary to supplement a ration of alfalfa and corn silage with a liberal ration of high-priced grain in order to get the cows to do their best, while even the heaviest producing cow will give practically as much milk on a ration of only alfalfa and dried beet pulp as on the most concentrated grain ration. We have proved this absolutely by the official scales and test."

This is the statement of McAllister & Son, the well known breeders of Holstein Freisian Cattle. You can get equally satisfactory results. Go to your feed dealer today and order a single 100-lb. sack of either the plain or molasses dried beet pulp. Ask for Larowe's. Test it on one cow whose milk record you know—and watch results.



—is clean, wholesome, appetizing; aids digestion; contains five times as much nutriment as silage, with as great or greater succulence—swelling to fully six times its original bulk when moistened. It is put up in convenient 100-lb. bags and may be had either plain or with molasses.

FREE Our Booklet "Profitable Feeding."

—containing valuable information on feeds and feeding. Should be in the hands of every dairyman. Write for a copy—today.

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Save That Last Crop of Alfalfa



by Putting It in an Ideal Green Feed Silo

BECAUSE OF THE RAINY WEATHER encountered when the last crop of alfalfa is ready to cut, it is very difficult to cure.

BUT YOU NEED NOT SUFFER a loss on that account, for if put into an Ideal Green Feed Silo it will make just as good feed as when harvested in any other manner and you can silo it in the rain if necessary.

ORDER YOUR IDEAL GREEN FEED SILO NOW and get it up ready for this last crop of alfalfa when it matures.

YOU CAN COMMENCE FEEDING it just as soon as the silo is filled, and by next spring it will be empty and ready to receive that first cutting, that as hay is usually not worth handling because of the weeds it contains, and the trouble experienced in curing it.

THE SPRING FILLING can in turn be fed out in plenty of time to receive the crop of corn in the fall, thus enabling you to fill your silo three times within less than a year, any filling of which will pay you enough profit to buy the silo and at the same time provide the equal of the very best of pasture for the year round.

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WE CAN MAKE SHIPMENT within four days after we hear from you. Write us now.

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DE LAVAL DAIRY SUPPLY CO.
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Everything for the Dairy

Billiken Herd of O. I. C. Swine

Every Animal is Cholera Immune

Best blood lines represented. An attractive offering of young boars and gilts, by four different sires. The big, smooth, growthy kind. A few bred sows that will soon have their second and third litters. A certificate of registration FREE with every animal. Write for special quotations.

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5000 Tons Choice Dairy Alfalfa Hay
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If you are in the market to buy see us. We can save you money. If you have Hay to Sell see us.

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Manufacturers and Importers of Machinery and Appliances for the Dairy and Creamery

Industrial Chemicals

759 South Los Angeles St., Los Angeles

SHEEP AND HOGS AT P. P. I. E.

Continued from Page 459.

E. Cleveland, Gresham, Oregon, also exhibited a good lot of Shropshires.

Cotswold Sheep

Oregon produces a lot of good Cotswolds that are bred on the farms and ranges. Many Cotswold rams are used on the Merino flocks from time to time to get more size.

The prizes were won by Wm. Riddell & Sons, Monmouth; F. A. Koser, Rickreall and D. J. Kirby, all of Oregon, and one good ram was exhibited by the University of California.

Dorset Sheep

W. H. Cleveland, Gresham, Oregon, had the only herd of this breed of horned mutton sheep, noted for the milking qualities of the ewes and the quick growing lambs.

Oxford Sheep

This big bodied mutton breed was shown by C. P. Kiser, Harrisburg, Oregon.

Southdown Sheep

Individuals of this breed of symmetrical, blocky, mutton sheep were

Rambouillet Sheep

shown by J. G. S. Hubbard, Monroe, Oregon, and the University of California farm at Davis.

Sheep of this breed were shown in two classes called Type B and Type C. The former are the more wrinkly ones, the latter the smoother sheep more desired on the range.

Exhibitors of Rambouillets are F. S. King Brothers Company, Laramie, Wyoming; Butterfield Live Stock Company, Weiser, Idaho; Quealy Peterson Sheep Company, Cokeville, Wyoming, and R. A. Jackson, Dayton, Washington. King Brothers were the largest winners.

Lincoln Sheep

There are a good many sheep of this big long woolled breed bred in Oregon, and many splendid individuals were shown by Wm. Riddell & Sons, Monmouth, Oregon, and Hawley & Son, McCoy, Oregon. There were also a number of good ones shown by Australian breeders.

Romney Sheep

Romney sheep are big bodied, long wool sheep that are very hardy. There are many of them in Australia and they were shown by breeders from that country and Wm. Riddell Jr., Monmouth, Oregon.

Corriedale Sheep

This is a breed that has been developed in Australia by crossing fine woolled Merinos with long woolled Lincolns, Cotswolds and Romney Marsh sheep. The purpose was to fix a type of cross bred sheep for the ranges.

They are being introduced by the United States government and the Wyoming Corriedale Company, Cheyenne, Wyoming.

The Wyoming Corriedale Company and several Australian breeders made a good show which was judged by Prof. F. R. Marshall of the United States department of agriculture.

Persian Fat-Tailed Sheep

The C. P. Bailey & Sons Company of San Jose are showing this breed. They have very heavy tails, weighing from 20 to 30 pounds. This part of the sheep is considered a delicacy in Persia.

Persian sheep are recommended for crossing on native sheep for increasing hardiness and mutton production.

Karakule Sheep

Lambs of this breed produce astrachan, the black curly coated wool or fur that is used in making trimmings and linings for expensive garments. One lost was shown by Alex. Albright, Dundee, Texas.

Angora Goats

The goat has a great field in California and the Pacific Coast in clearing up brush land, and the mohair from Angoras is a valuable product. Consequently there was much interest in this class.

The exhibitors and winners were C. P. Bailey & Sons Company, San Jose; Mrs. M. Armer, Kingston, New Mexico; Florence Kite, Redding; John Stump, Monmouth, Oregon, and Wm. Riddell & Sons, Monmouth, Oregon.

Milch Goats.

The showing of milch goats is not as large as was anticipated. There are some high-quality animals—Toggenbergs—from the ranches of three exhibitors. Mrs. Winthrop Hunland of Redlands makes the largest showing and has on hand a fund of enthusiasm which is catching, and intense interest is shown by crowds about the goat stalls. Miss M. Wagner for herself and Miss I. Richards of San Mateo County has some fine stock, as has Mr. Bernstein.

Only nannies are shown, as the billies were not admitted. An exhibit of cheese made from goats' milk is made by Howland Ranch. It is put up in small waxed paper containers and is good proof that an outlet for surplus milk may be had. Small cartons may be used and a regular daily supply of cheese sent to all who like the dainty.

One of the most interesting features of the hog show is the big exhibit of hog motors which has been on display all summer. This is a device by which the hog grinds his own feed, saving the cost of grinding, giving the hogs exercise, keeping the feed clean and preventing waste.

* * *

The Poland-Chinas.

Breeders of Poland-Chinas in California and the adjoining states can always make a good show. There are many individuals here that rank with the best in America, and in some districts the Poland-China leads all other breeds in the number produced. Hanford, for instance, is represented by four breeders in this show.

Secretary McFadden of the American Poland-China Record Association was in attendance and distributed the special prizes awarded to animals recorded in that association. The awards were made by a veteran breeder and judge, J. M. Kemp of Kenney, Illinois. His job was a difficult one at all times because of the differences in type. There were some of the extreme big type—others of the medium type—and when an animal of one sort was superior to another of another type he was sometimes compelled to jump from one type as first to another as second.

At the Eastern shows practically all big type Poland-Chinas are being shown, and in order to win they must be highly fitted and very fat. If the Eastern herds that were entered had competed our breeders would have learned that present-day show yard requirements call for lots of size and extreme finish. Judge Kemp wants an animal to show that it can produce a large quantity of meat at an early age; he wants the feet strong and the back fully arched. They must be big and have with their size as much quality as possible.

The big type Poland-China began to make its appearance 15 years ago. Many breeders wanted more size and bone and bigger litters, believing that it is possible to get a lard hog too fine. There was great opposition to the big hog at first—now nearly all Poland-Chinas are "big type."

One of the most interesting and commendable features of the entire swine show was the decorations put up over and around the exhibit of Poland-Chinas of W. Bernstein and W. H. Trehwitt of Hanford. They occupied the stalls that had quartered the Blackhawk horses and later the Carnation Holsteins, but instead of using potted plants for embellishment they placed farm products in a very attractive way. There were a lot of 100-pound pumpkins—one weighed 138—and all of the grain and grasses that grow in such abundance in Kings County. They had wheat and barley, milo, sorghum, Egyptian wheat, feterita rice, rye, oats—and Indian corn so big that they were accused of importing it from Missouri. The decorations were all "hog feed," making a very harmonious effect. M. Bassett of Hanford had his exhibit decorated with big Indian corn ears.

At the pens where G. V. Beckman of Lodi kept his fine lot of Poland-Chinas there was on exhibit—and being used by the hogs—the Dierks sanitary automatic hog feeder, a patented device that permits the hog to be the judge of the amount of grain he consumes and, while keeping feed before the animals constantly, pre-

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Gombault's Gaustic Balsam

IT HAS NO EQUAL

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It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils, Corns and Bunions. GAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for

Sore Throat
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Sore Lungs
Rheumatism
and all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

OTC. Hill, Tex.—"One bottle Gaustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills."

Price \$1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R. The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

TEN GUERNSEY COWS

AVERAGE 947 lbs. FAT

Large and Economical production is the key to larger profits. The Guernsey Cow is a sure way to increased profit.

Shall we send literature?

Guernsey Cattle Club,
Box F Peterboro, N.H.

Bred Sows

Ten Choice Bred Berkshire Sows

Registered and Both Sire and Dams are Prize Winners at California Fairs. Call or Address

H. L. Murphy
Perkins, Calif.

Registered Swine TAMWORTHS

and Duroc-Jerseys

We can now fill orders for Bred Sows, Boars of breeding age, Gilts 8 to 9 months old, and Weanling Pigs.

This is the largest herd of TAMWORTHS in the State. Our stock sure to please. Write or call and see us.

SWINELAND FARM

W. O. PEARSON, Prop.
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Holstein-Friesian Cattle

Registered young bulls from best families. Some of serviceable age—also both young and matured females.

Registered Berkshire Pigs

Masterpiece, Longfellow and Robin Hood strains. Extra fine individuals of both sexes at reduced prices—we pay registration fee. Careful attention given to mail orders.

Whittier State School
Whittier, Calif.

Protect Your Hogs

against the ravages of cholera by vaccinating them

with Purify Brand Serum

made and tested under the most rigid U. S. Government supervision; sold at reasonable prices. It's a business proposition. You're buying protection. Write, or telephone Thatcher Serum Co., Riverside, Cal. J. L. Thatcher.

vents waste and keeps the feed clean. The automatic device is a very clever arrangement and works perfectly. Self-feeders have proven a very profitable and satisfactory way of feeding. With this device different kinds of feed may be kept in separate bins, if desired, or all of the kinds may be mixed together.

M. Bassett had a remarkable exhibit that shows the result of years of breeding and many months of careful fitting.

W. A. Young has a great boar, one that came near being champion, and many great sows.

W. H. Rough has in Superba one of the great show boars of the breed, and

V. Beckman presented a remarkably smooth lot of hogs.

Poland-Chinas were exhibited by M. Bassett, W. Bernstein, W. D. Trewitt and F. D. Ross of Hanford, J. W. Wakefield, Acampo; W. A. Young, Lodi; G. V. Beckman, Lodi, and R. W. Hogg, Salem, Oregon.

Poland China Awards.

Aged Boar: 1, Rough—Superba; 2, Hogg—Clymers; 3, Bassett—Hustler; 4 and 5, Bernstein—King's Wonder and All-Is-Well.

Senior Yearling: 1, Young—1 B A Wonder.

Junior Yearlings: 1, Bassett—Perfect Hustler; 2, Trewitt—Jumbo Equal; 3, Ross—Warrior King; 4, Hogg—Panama King; 5, Beckman.

Senior Pig: 1, Bassett—Hustler's Model; 2 and 3, Hogg—Panama Black and Chief; 4, Bassett—Gold Coin 3d; 5, Ross—Warrior Cal.

Junior Boar Pig: 1 and 2, Bassett—Banker's Boy and Chief's Victor; 3, Young—Grand Model; 4 and 5, Bernstein—Tom H and King Bill; 6, Hogg—King Captain.

Aged Sow: 1, Hogg—F. M.'s Darkness; 2, 4, 5 and 6, Bernstein—Candy Kid, Besie Ross, Lady Ross and Chocolate Drop; 3, Rough—Pride of the West; 7, Hogg on C's Oh My.

Senior Yearling Sow: 1 and 3, Hogg—Mellow Girl and Darkness 2d; 2, Ross—Silver Ruth; 4, Bassett—Her Majesty; 5, Rough—Western Pride.

Junior Yearlings: 1, 3 and 5, Bassett—Miss Beauty, Beautiful and Lady Style; 2 and 6, Hogg—Miss Oregon and Miss Salem; 4, Wakefield—Fair Price; 7, Bernstein—Queen of Kings 2d.

Under Year Pig: 1 and 3, Bassett—Golden Beauty and Grand Picture; 2, 4 and 5, Hogg—Miss San, Miss Fran and Miss Cisco; 6 and 7, Young—Darkness A and Lady Louise 3d.

Junior Sow Pig: 1, 2, 4, Bassett—Dewdrop, Gold Drop, Corrector's Lady; 3, Hogg—Foxy Girl; 5 and 6, Young—Finished Model and Fashion Model.

Get of Sire: 1 and 2, Bassett; 3, 4 and 5, Hogg.

Produce of Dam: 1, Bassett; 2, 3, 4, Hogg; 5, Bernstein.

Aged Herd: 1, Bassett; 2, 3, Hogg; 4, Bernstein; 5, Trewitt.

Young Herd: 1, 2, Bassett; 3, 4, Hogg; 5, Young.

Exhibitors Herd, Exhibitors Young Herd and All Barrow Classes: Bassett.

The Berkshire.

Another world's record has been broken by Pacific Coast Berkshire breeders. They have assembled the largest and best lot of Berkshire hogs ever shown at one time. Prof. C. F. Curtiss, president of the American Berkshire Association, is authority for this statement.

Prior to this time the largest show of Berkshires was held at the world's fair at St. Louis.

The strength of the Berkshire interests of California and the coast is reflected in this spectacular exhibit. Over 300 head are competing for prizes, more than twice as many as any other breed shown.

The Berkshire has made good on the Pacific Coast and has proven to be particularly well adapted to our conditions. Those who are now breeding them have been unable to supply the demands for stock and many new breeders have started herds during the past year.

Much disappointment is expressed among Berkshire exhibitors that several of the best Eastern herds that were scheduled for this show were not allowed to be here because of the quarantine. Our breeders were anxious to compete with these hogs that have been champions at the Eastern shows this fall.

Two barns are required to house the Berkshire entries.

The judging was done by F. A. Scott, Belleville, Illinois, a veteran breeder and farm newspaper man. He declared that this was the best of the 18 state and national shows of Berkshires at which he has placed the awards.

There was a large crowd of intensely interested people in attendance at the Berkshire judging ring constantly.

Eleven aged boars were lined up for judgment. In this class the great breeding boar, Grand Leader 2d, was easily the winner. He has a good

Why Let Your Cows Slink Their Calves?

What is Abortion in cows?

A contagious, communicable venereal disease that is costing the breeders of the U. S. millions of dollars yearly.

Can this disease be prevented or overcome?

It can be prevented and overcome.

What do the agricultural colleges say?

Some say it can be prevented and overcome and others say it cannot be.

What does the U. S. Government say?

The U. S. Government recommends the hypodermic treatment as the very best method of combating this disease.

Who says that Abortion cannot be prevented and overcome?

People who have not used the Roberts treatment, or who have used only part of the treatment and not according to instructions.

Who says that Contagious Abortion can be prevented and overcome?

The owners of 5,000 herds of cattle who have treated their cattle from one to four times during the past 25 years, owing to the fact that their herds had become reinfected through new animals purchased.

Has this treatment always proved successful?

No; because the directions have not been followed.

Does Dr. Roberts claim that this treatment will wipe Abortion out of any herd regardless of how long it has been afflicted?

Yes, absolutely; providing the cattle are free from tuberculosis and providing directions for treatment are followed.

What evidence is there that this is true?

Animals and herds that were pronounced incurable by veterinarians and owners after having many kinds of abortion treatments given and applied to them have been successfully treated by Dr. Roberts and have been given splendid 7-day and yearly records. Lynden Grove Betsy De Kol, 5 years old, 14,844 lbs. of milk, 585 lbs. of butter, in 265 days, is a typical case.

Do agricultural colleges indorse the Roberts treatment?

No; agricultural colleges will not indorse or recommend any commercial treatment for live stock diseases.

Does the U. S. Government recommend the Roberts treatment?

The U. S. Government indorses no commercial treatment, but in the government bulletin it recommends a treatment that is embodied in the Roberts treatment. Everything that is recommended in the U. S. Government bulletin is contained in the Roberts treatment, with ingredients that have never been made public.

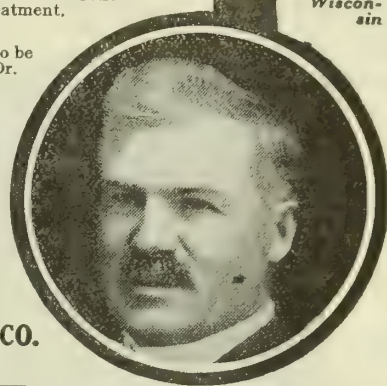
If Dr. Roberts can buy infected herds, knowing them to be such, and by his treatment wipe out the disease; if Dr. Roberts can introduce the disease into a herd through infected animals, then check it and wipe it out; if Dr. Roberts can keep his own valuable herds of pure bred cattle free from tuberculosis and contagious abortion, it proves that it can be done. Dr. David Roberts has done these very things and what he can do you can do if you will do as he tells you to do.

There is a Roberts medicine for every common animal ailment. Sold by over 3500 druggists; if not at yours, write us direct, give your dealer's name. Dr. Roberts' great "Practical Home Veterinarian," 184-page cloth-bound book, sells for \$1, will be sent you postpaid for 25c, together with free sample of STOKVIGOR.

DR. DAVID ROBERTS VETERINARY CO.

140 Wisconsin Avenue, Waukesha, Wisconsin

All Abortion treatments are shipped direct from our laboratories at Waukesha, Wisconsin



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We build to order, for any capacity, TANKS FROM CLEAR AIR-DRIED REDWOOD—THE WOOD EVER-LASTING.

Our tanks are built to exact measurement by the most skilled mechanics.

THEY ARE GUARANTEED ACCURATE IN EVERY PARTICULAR.

Built for All Purposes

They are cheaper than metal tanks and outlast several of them.

WE ALSO BUILD TANK TOWERS.

Remco Redwood Pipe

Is scientifically designed and perfect in manufacture. The smooth interior gives greater carrying capacity.

Design and workmanship give strength.

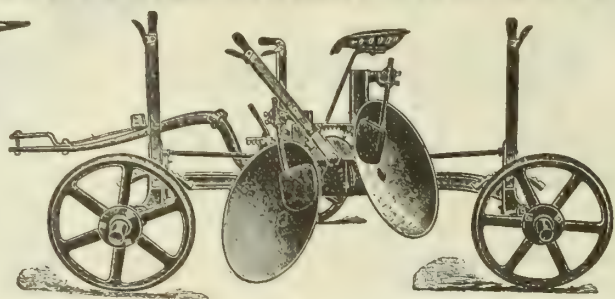
Redwood gives length of life.

Suitable for Irrigation, Power, Water Supply and Drainage or Sewage Disposal.

Redwood Manufacturers Company

1604 Hobart Building, San Francisco

Mathews Reversible Twin Disc Plow



THIS is the only reversible disc plow which does not use segments to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—and stick to the work on hillsides.

It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost you no more.

We are general agents for a complete line of Disc plows. Glad to tell you about them at any time.

Newell Mathews Company Established 1886

Implements, Wagons, Dairy Supplies, Road and Grading Machinery
217-219 E. Market St., Los Angeles

Dierk's Sanitary Automatic Stock Feeder



Will feed any stock with every sort of grain or ground feed.

Golden West Agency

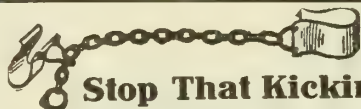
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Demonstration Dept. of Live Stock
Barn No. 3

Panama-Pacific Exposition

Write for circular and prices.



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by using the Anti-Kicker. It does not worry the cow or interfere with the flow of milk. It is indispensable for breaking heifers, cows with sore teats, or vicious kickers. Put on or taken off in 15 seconds. Guaranteed to be an absolutely perfect anti kicker. Send today and stop fussing.

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Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, Muscles or Bruises. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone. Horse can be used. \$2 a bottle delivered. Describe your case for special instructions and Book 2 K Free.

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All our pipe and casing has newly cut threads with new couplings attached and dipped in asphaltum. Guaranteed good as new. Prompt delivery on carloads or less. Small orders receive same attention as large ones. All sizes of pipe, also fittings and valves.

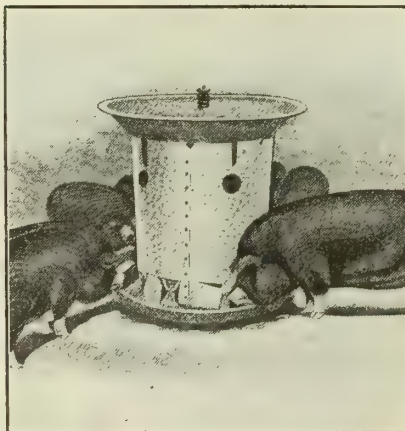
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Hogs Grind Their Own Grain
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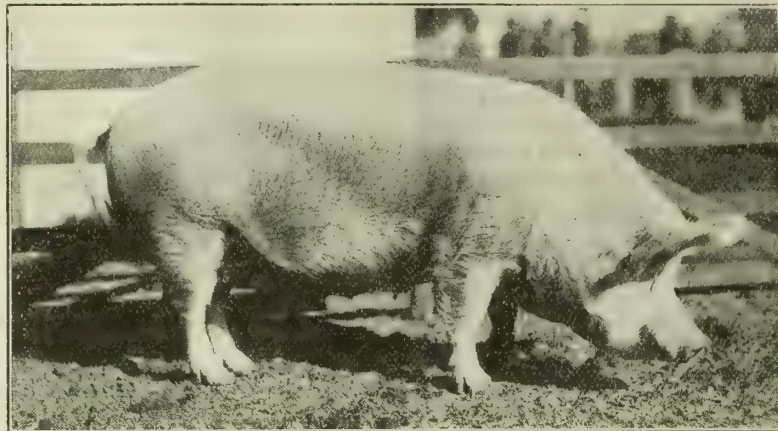
H. L. Murphy of Perkins is on his way west with 42 head of Shorthorn cattle purchased for distribution in California from the best herds of Nebraska.

The Arizona state fair will be held at Phoenix, November 15-20.

head, wonderful width and depth, stands well on his feet, has a square rump and deep ham—and best of all is a breeder of wonderful prepotency. There were many of his pigs in the show, and when he was made senior champion and later grand champion the ratings met with universal ring-side approval. He is one of the great boars of the breed. Rival's Schoolmaster 2d, a very massive boar with a good back and loin, was second. Charmer's Duke 77th was shown in breeding condition, and is a boar of exceptional length and much character, resembling the great Longfellow, the boar that is the "father of the

for the University of California farm at Davis before the judging. He is a fine demonstration of the breeding quality of his sire. He has a typical head, a long, deep body, a well-arched top line and a straight bottom line, a square rump, full hams extending well down to the hocks and exceptionally strong feet and legs. Ames Rival 106th is a well finished one and there was quality and finish all down the line.

Another sensational class was the junior boar pigs (six to 12 months). Ames Rival 102d is a remarkable demonstration of the weight and finish possible in a Berkshire pig and Royal Kintyre is a splendid type with an



Oak Grove Pearl 4th.

Grand Champion Yorkshire Sow, P. P. I. E., Owned by Riverina Farms.

breed." Panama Lee was placed fourth and was very much admired by Eastern visitors. He is a very "breedy" looking boar with a good head and heart girth and a deep, wide body. He is a satisfactory breeder. There are a number of sows sired by him in the Butte City Ranch herd at Butte City that are remarkable individuals.

In the senior yearling class (18 to 24 months) the winner, Royal Pointer 2d, is a boar of great character—has a wide, well dishd face, great length and depth of body and is very even from end to end. He was rated above Bandmaster 2d, a champion at Iowa and Minnesota state fairs last year and a superior individual. Both hogs were selected in the East by W. M.

even body and a good rump. Many would have rated the pig placed third at the head of the list. He is Mayhews Leader 6th, a son of the grand champion, not so highly fitted but a boar of great character, a long body, exceptionally good feet and legs and strong heart girth. L. E. Frost, a great Berkshire judge and editor of the Berkshire World of Chicago, the breed organ, says he is one of the best in America.

"There has never been a better lot of Berkshire sows shown in the world," said Prof. C. F. Curtis as the 27 entries were lined up for judgment, and this was heartily agreed to by L. E. Frost and other veteran Berkshire men in attendance.

So good were they that any of the



Mayhews Leader 6th.

Son of P. P. I. E. Grand Champion, Bred by Humphrey, Owned by Butte City Ranch.

Carruthers, making the winning a splendid testimonial to his judgment.

The junior yearling (12 to 18 months) class was strong both in numbers and the character of the individuals shown. First honors went to Washington on Kintyre Laird, a remarkably smooth, mellow animal brought out in good condition. The Curtis bred Ames Rival, a boar with a good head and a remarkable body, was second. Another Curtis boar was third. He has an exceptionally wide back and is very deep. He weighs 675 pounds. The hogs bred by Prof. C. F. Curtis, Ames, Iowa, dean of the Iowa agricultural college and president of the American Berkshire Association, were prominent winners all through the show. There were many of them in the herds of Carruthers & McFarland and Thatcher, Ennis & Williamson. Rival's Champion Boy is a smooth, even hog, and Fashion Longfellow a long-bodied one with a good head.

The senior boar pig class (six to 12 months) was another big one. The Grand Leader 2d pig, Star Leader, that was placed first and later made junior champion and reserve grand champion, is a worthy son of his father. He was bought by Prof. J. I. Thompson

first dozen would have looked well at the head of the line, and anyone in the prize money was to be congratulated.

It was a great victory for California and a high compliment to the judgment and ability of F. W. White of Elk Grove when his state fair champion sow, Robin's Ruby, was given first prize. She was not in high condition, is nearly five years old and raised a litter of pigs this spring. Judge Scott says she has a head that is his ideal and as good hams as he ever saw on a hog, and with it she is one of the big, deep, useful sort that are great breeders.

Premier's Fashion 2d, is another big useful one. Rookwood Lady 5th, a daughter of the great Rival's Champion's Best, the great Curtis boar, was shown in excellent condition and is a wonderful sow.

The senior yearling sow class brought forth one of great scale and character in Rival's Pointer Star 13th, and a very superior animal with a fine head and a good back, the mother of a summer litter, in Forest Grove Laurel 2d. Daisy Leeth is a nice smooth one from Oregon.

Continued on Page 475



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contains no animal oils,—and rodents won't touch harness that's treated with it. Eureka nourishes the leather fibre—keeps your harness soft, pliable and strong. Have your harness man dip your harness in Eureka Harness Oil. Or buy a can and apply it yourself. It's easy—and it pays. Make your harness last longer. Dealers everywhere.

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The Texas champion cow, Pauline Calamity Burke is the champion officially tested milk cow of Texas, with a record for twelve months of 16,384.9 pounds of milk and 655.45 pounds of butterfat. She was three years old and had just dropped a calf when the test started. This registered purebred Holstein cow by her performance indicates the possible profit from dairy farming in the Lone Star State, as her total feed cost was \$103.51 and net income \$635.83, not counting, of course, labor and depreciation. Investigate the big "Black-and-Whites."

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of—
Advancer, Chief
and Col. Blood

Pigs for Sale at all Times
Either sex. Guaranteed as represented or money back. Now booking orders for weanlings. Also service boars.

E. F. Curtis

Napa Calif.

When writing advertisers, mention the Cultivator.

THE CONSIGNMENT SALE OF BERKSHIRES

A sale of Berkshires was held Saturday afternoon under the auspices of the American Berkshire Congress at the Stadium on the exposition grounds at San Francisco.

President Charles Moore of the exposition addressed those attending the sale, calling attention to the great educational work done by the live stock department of the exposition. He is a breeder of Berkshires and a member of the association. He started the first sow of the sale, Siberfa Duchess 17th at \$100. She sold to William Carruthers at \$175.

F. A. Brush of Santa Rosa bought the grand champion sow, Riverby Princess, for \$860 and Manager Taylor of the Mrs. Anita Baldwin Ranch at Los Angeles bought the junior yearling first prize boar at \$585, and many other good individuals.

Col. Hoard of Stockton and Col. Rhoades of Los Angeles creditably handled the sale, with L. E. Frost of the Berkshire World assisting in the ring. Frost is largely responsible for success of the sale.

Forty-seven head sold for \$6,956, an average of \$148 per head.

Frank A. Brush of Santa Rosa, one of the most prominent Pacific Coast breeders, was a big buyer and bought the first prize boar pig after the sale.

C. C. Moore bought several for his Cottonwood Ranch.

Sales were made as follows:

Sales.

Anita Baldwin Ranch, Los Angeles—Grand Lady Mayhews 3rd, sow, consigned by Humphrey, \$165; Rookwood Belle 5th, sow, consigned by Steybrae Farm, \$210; Kintyre Laird, boar, consigned by Clark Bros., \$685; Silbira Royal 6th, sow, consigned by Talmage, \$145; Daisy Lee 10th, sow, consigned by Warnock, \$240; Silbira Robin Hood 9th, sow, consigned by Talmage, \$85; No. 51, Not Catalogued, \$175.

T. M. York, Modesto—Master's Rival's Princess, sow, consigned by Humphrey, \$100.

A. S. Bates, Holt—Pure Gold Longfellow's Sally 5th, sow; Pure Gold Dora's Rose 2nd, sow, \$77.50 each, consigned by Pure Gold Stock Farm.

H. Hewitt, Calistoga—Rookwood Lady 47th, sow, consigned by Steybrae, \$150.

Hopland Stock Farm, Hopland—Rival's Pointer Star 14th, sow, consigned by Steybrae, \$150.

Timken Ranch, El Centro—Rival's Pointer Star 13th, sow, consigned by Steybrae, \$225; Suisin Artful Lady, sow, consigned by Alexander, \$75.

E. K. Knollin, Chicago—Rookwood Lady 77th, consigned by Steybrae, \$340.

A. B. Humphrey, Mayhews—Kennett's Lady Lee, sow, consigned by G. A. Murphy, \$70; Miss Plattsburg A. 7th, sow, consigned by S. B. Wright, \$100; No. 52, Not Catalogued, \$100; No. 53, Not Catalogued, \$75.

F. W. White, Elk Grove—Columbia's Model, 103, sow, consigned by Murphy, \$50.

C. C. Moore, President of Exposition, San Francisco, Ranch at Cottonwood—Columbia's Model 100th, sow; Columbia's Model, 101st, sow, both consigned by Murphy, \$70 each; Lady Fay 5th, sow, consigned by Hall, \$105; Model Princess 42nd, sow, consigned by F. W. White, \$65.

Russ Avery, Los Angeles, Ranch at Lancaster—Columbia's Model 102nd, sow, consigned by Murphy, \$75; Winona Lee Laurel 4th, sow, consigned by F. R. Steel, \$50.

G. W. Wilder, Redlands—Oakes Lady Robin Hood, also Oakes L. R. H. 2nd and Oakes L. R. H. 3rd, sows, consigned by T. E. W., \$100 each; Rose Primo 2nd, sow, consigned by Wright, \$45; Nos. 47 and 48, Not Catalogued, \$60 and \$70 respectively.

Hibbard and Baldwin, Michigan—Amer Rival 106, sow, consigned by T. E. & W., \$150.

J. A. Cristy, Centerville—Wright's Columbia and Wright's Columbia 2nd, sows, consigned by Wright, \$80 each.

F. A. Brush, Santa Rosa—Riverby Princess, grand champion sow of Panama-Pacific International Exposition, \$860; Riverby Princess 2nd, sow, \$200, both consigned by D. C. Bunn.

C. A. Thayer, San Francisco—Lady Minnet H., sow, consigned by Hall, \$145; No. 43, Not Catalogued, \$180.

D. C. Bunn, Prosser, Washington—Tule Laurel, sow, consigned by Alexander, \$155. No. 50, Not Catalogued, \$250.

Traver W. Goethe, Perkins—Panama Duchess 5th, sow, consigned by F. W. White, \$40.

Winona Champion 13th, boar, consigned by Steel, \$115.

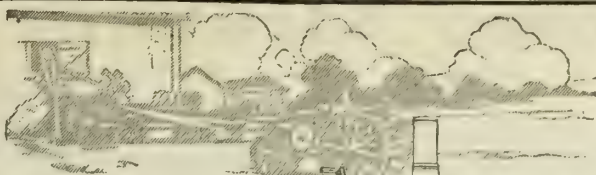
Joe Wilson, Mason, Nevada—Silbira Violet, sow, consigned by Talmage, \$125.

Carruthers & McFarland, San Francisco—Silbira Duchess 17th, sow, consigned by Talmage, \$175.

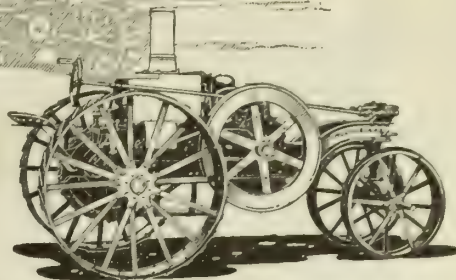
Mrs. W. H. Taylor, Santa Anita—No. 49 on Catalogue, \$155.

C. A. Bear—Daisy Lee 11th, sow, consigned by Warnock, \$180.

American Berkshire Association, Springfield, Illinois—Bought for export to South America, Silbira Robin Hood 10th, sow, consigned by Talmage, \$100.



GRAND PRIZE
WINNER
AT
SAN FRANCISCO
EXPOSITION



Mogul 8-16 Oil Tractor \$675.00 Cash f. o. b. Chicago

THE small-farm tractor is here to stay.

Farms even smaller than 100 acres are rapidly being equipped with Mogul 8-16 oil tractors. Since their introduction, the great plant at Chicago has been turning out these machines by the thousands and is still behind orders.

There is only one reason for this unprecedented demand. Tractor farming pays. Horse boarders are cut down to the small number required for cultivating and the few other jobs for which tractors cannot be used. The plowing, disking, seeding and harvesting are finished without relation to the effect of weather on horses. Costs are reduced all 'round. Net farm profits are higher. Tractor farming pays well on small farms when the work is done with a Mogul 8-16. The longer you put off buying one, the more money you lose.

The Mogul and Titan lines include larger tractors to 30-60 H. P., all operating on low grade oil fuel, and a full line of general purpose oil engines, from 1 to 50-H. P. in size. See the local dealer who handles these machines or write us for full information.

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USA

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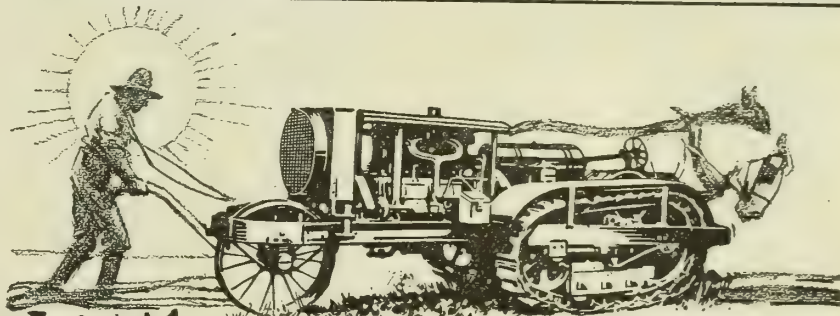
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No. 10

Possibly you still look upon the Caterpillar as a big farm proposition, and are not yet convinced that it is a cheaper and better form of tractive power than horses. Listen!

E. A. Brim of Williams says: "Having used a Caterpillar almost 3 years, doing all kinds of work, I find that the expense of this work is at least one-half less than doing the same work with teams."

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USED WINDMILLS—WINDMILLS NEW
8-ft. steel aeromotor, steel tower, complete, \$30; 10-ft. steel direct mill, \$18; 10-ft. wood mill, fine, \$10; 10-ft. steel Star, \$25; 12-ft. steel mills, \$39.

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Redwood, 1000, \$13; 2000, \$19.50; 3000, \$25; 4000, \$29; 5000, \$35; 10,000, nearly new, \$55; 25,000, with 20-ft. stand, \$75; 35,000, 40-ft. stand, \$190; 50,000 with stand, \$250. We manufacture new galvanized tanks—1000 gal., \$19.50; 2000, \$29.50; wagon tanks, irrigating pipe.

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1½-h., \$25; 2-h. Fairbanks, \$35; or with Jack, \$39; 3-h. R. & V., \$55; 6-h. Olds, \$68; 6-h. auto engine, \$25; 12-h. Stover, \$150; 11-h. White & Middleton, \$175; 28-h. Lambert, \$275; 50-h. Lambert, \$600.

PUMPS—PUMPS—PUMPS
Prices special this week only. Brand new 3 Horizontal, \$32.50; used 4 fine, \$38; 5 Hor., \$42.50; two 5 verticals complete, \$69; 6 ver., complete, \$75; nearly new 7-inch Krogh vertical complete; 50-foot shafting, \$125; 2 stage Krogh No. 3 pump, \$35; 2 stage 3 Byron Jackson, the latest complete, \$110; same thing in 5-inch, \$125, cost \$400, used year; No. 8 Hor., \$90; two-stage Hor. No. 5 Byron Jackson, cost \$390, for \$125; 6-inch Rotary new, \$50; 6½ Duplex new, \$45; Meyers Duplex, \$30; Pitcher pumps new, \$2.75; hand force pumps, with or without cylinders, rods and piping.

BRASS CYLINDERS.
Double 4x60, \$25, cost \$65; double 5-inch, \$35, cost \$70; double 6-inch, \$33; double 8-inch to 60, good as new, \$70; 7-inch Stearns, cost \$200, good as new, \$70; 10-inch single, \$25; others too numerous to mention.

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Gates, foot valves, 1-inch of new gates and checks, 8-in., at \$12; 6-in., \$6; 1½ new galvanized pipe, 3000 feet left, \$8.75.

USED RANCH MACHINERY
Mowers, \$15 to \$25; mouldboard, disc riding plows, \$17 to \$29; hay rakes, \$15 to \$18; 6 gang disc for tractor, ½ price; beet seeder, \$29; \$160 Superior grain drill, \$75; 12 disc cultivator, crusher and roller, \$19; balers, headers, scrapers. Anything ranchers need.

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We do no fake advertising. Trade us what you don't want for what you need. If we haven't what you want, can find it for you quicker and cheaper than you can. We buy first-class used machinery, if price is right. No junk or stolen machinery wanted. DEMMITT CO., 120 N. Main, Los Angeles. A5191, Bdwy. 3650.

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Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

Choice Lot of One-year-old Apple Trees; first-class stock, 4 to 5 feet; \$5.00 per 100. Full line of nursery stock at equally low prices. Catalogue and price list on request. Wirt Nursery, R. F. D. No. 1, Portland, Oregon.

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Unload on me your surplus Avocado trees. Write how cheap. C. W. Brown, Frost Proof, Fla.

Prune Trees 12c, Walnuts 30c. Nash Nursery, Sebastopol, Cal.

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Wanted—Position as foreman on citrus or walnut ranch of considerable size by capable young man, 35, married, industrious and of good character. Has had 10 years' experience as citrus fruit and walnut grower in Whittier district. All references. Correspondence welcomed. Address Box 1690, Los Angeles, Cal.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

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Mammoth Bronze Turkeys—Limited number, young toms from extra early stock hatched in January. \$7.50 each. T. W. Thomason, R. F. D. 11, Box 579, Los Angeles.

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Big Type Poland Chinas—I have an extra good lot of strictly high class young boars from three months to one year old that are fit to head any herd anywhere. Visitors say they are the best they have seen. They have the large size, the good hams and shoulders, the strong arched backs, great length and depth of body, plenty of smoothness, mellowness and quality—in fact they have two good ends and a good middle, are good lookers and money makers. Their dams are either from Illinois, Iowa or Missouri, or they are from dams whose sire or dam are from these states. These boars are sired by Iowa Wonder who will weigh over 1000 pounds in show condition. He is a son of A WONDER, the greatest Poland China boar living or dead. These young boars carry the stamp of their sire and will sire pigs that will please you. Satisfaction guaranteed in every particular. I am overstocked. I have boars galore. I will sell them at extremely low bargain prices. No females for sale at present. The book on "THE HOG SUPREME—THE POLAND CHINA" will be sent to you free for the asking.

Yours for the BIG TYPE—the kind that grow faster and larger and have more pigs. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I. C. Swine; the big white kind. Ready for immediate shipment; weaned pigs of both sexes; pairs and trios; mated not akin. All these pigs are from big type stock, of extra heavy bone; weight, with early maturing quality. Immunized against hog cholera; crated and registered free. Write for descriptive circular and price list. C. B. Cunningham, Mills, Sacramento County, California.

Del Dazo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding, BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

65 Head Registered Poland China Hogs for sale; all sizes, both sexes. None better anywhere. Large and medium type. \$20.00 and up. We will please you or refund your money. W. A. Young, Lodi, Cal.

Blue Ribbon Herd Duroc-Jersey Hogs, Service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F., 1915. prices. John P. Daggs, Modesto, California.

Thoroughbred Poland China Boars of large type for sale. Buy at home and save express. Prices reasonable. For further particulars write to Maywood Colony Nursery, Corning, Cal.

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Milch Goats—Two ¾ Toggs, does, 2 years, both bred. One ¾ Toggs, doe, 7 mo.; one 15-16 Toggs, buck, 5 mo. H. D. Minor, Wasco, Cal.

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Poland Chinas—Lake-Side Stock Farm. Weanlings to eight months. Satisfaction or money refunded. Geo. V. Beckman, Lodi, Cal.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Navato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Riccomi Bros., Mountain View, Cal.

Poland Chinas—Young Stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

Glenview Poland China—Stock for sale. Chas. R. Hanna, R. F. D. No. 3, Riverside, Cal.

For Sale—Cheap, two high grade Angora bucks. Address Roy Saunders, Brown, Cal.

W. J. Hanna, Reoaks Ranch, Gilroy—Large type Poland Chinas; bred gilts. Service boars.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

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Fruit Ranch For Lease—High class apricot and grape ranch, located in the Imperial Valley, for rent on share basis to good man who can finance the labor needed. Produces the earliest apricots and grapes in the United States, so commands fancy prices. A high class proposition for an experienced fruit man with a little money. The American Nile Company, El Centro, Cal.

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"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

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Poultryman Wants Position at once; practical man; salary or shares. Fifteen years' experience. References. Address L. J. H., Lock Box 12, Petaluma, Cal.

S. C. W. Leghorn Cockerels, pairs and trios; also booking orders for DAY OLD CHICKS; all from the highest utility fowl. Jos. E. Blackshaw, San Jacinto, Cal.

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Billiken herd of O.I.C. Swine. The big white kind; early maturing, weight carrying. Everything immunized against cholera by the simultaneous method. Pigs of both sexes from March, April, May and June farrows. Sires, Chief Again, Iowa Boy, Missouri Lad and Woodview Earl. Dams are all of the big, smooth type and very prolific. A few bred sows about ready for their second and third litters. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, California.

Our new book, "Gardening in California," by Ernest Brautnon, is certainly being well received. We have been selling them faster than we could get them bound.

However, we have at last succeeded in getting several hundred on hand and hope to keep ahead of the orders. The book is well printed on eggshell book paper and liberally illustrated with half-tone and text illustrations. The binding is a dark green silk cloth, which gives it a very rich appearance; it is a big bargain for \$1 or \$1.75 with subscription to California Cultivator.

SHEEP AND HOGS AT P. P. I. E.

Continued from Page 472

Thirty-seven junior yearling sows were presented for judgment, and as in the aged sow class, to be in the money required a superior individual.

This class brought forth Kintyre Bunt, the sow that was made senior champion and grand champion of the show. She is a sow with a smooth, deep, symmetrical body and wonderful quality. Rookwood Lady 96th is a splendid daughter of Rival's Champion's Best, and next to her was another by the same sire, Rookwood Belle 5th.

Rookwood Lady 77th, the winner in the senior sow pig class of 40, is a big, symmetrical one of great quality. Another deep bodied typey one is Kintyre Janet, and all down the list, even far past the place where there were no more ribbons to award, there were animals that any breeder can justly be proud of.

Thirty-four junior pigs were shown, and at the head of the list was the remarkably smooth, well finished one that was made junior champion and reserve grand champion, Riverby Princess. Rookwood Lady 107th and 108th are smooth, square ended ones of great character.

In the class for four animals the get of one sire there was a ringful of good ones. To win both first and second in such a class—as Humphrey did on the get of Grand Leader 2d—was a remarkable victory and demonstration of the great ability of this boar as a breeder. They were closely contested by the get of Rival's Champion's Best.

A great many of the Berkshires shown were cholera immune, and hog men will be glad to know that J. L. Thatcher is now handling Purity Serum.

J. L. Gish of Laws in Inyo County has a fine lot of Berkshire hogs shown in fair breeding condition.

California exhibitors of Berkshires were Pure Gold Stock Farm, Elk Grove; F. W. White, Elk Grove; F. L. Hall, Perris; S. B. Wright, Santa Rosa; A. B. Humphrey, Mayhews;

J. L. Gish of Laws; Carruthers & McFarland, San Francisco; Thatcher, Ennis & Williamson, Riverside; Stephen S. Day, Sacramento; Hopland Stock Farm, Hopland; G. A. Murphy, Perkins; C. E. Barrows, Los Molinos; Frank A. Brush, Santa Rosa; Alexander & Kellogg, Suisun; George Plummer, Fair Oaks.

Oregon was represented by F. R. Steel of Grant's Pass and D. D. Warnock, Dayton; and Washington by Charles M. Talmage, Newport; D. C. Bunn and Clark Bros., Prosser.

Berkshires

Aged Boars: 1, Humphrey—Grand Leader 2d; 2, Plummer—Rival's Schoolmaster 2d; 3, Brush—Charmer's Duke 77th; 4, Barrows—Panama Lee; 5, Steel—Big Four; 6, Wright—Duke Louis Wahler; 7, White—Dora's Duke.

Senior Yearling Boars: 1, Hopland Stock Farm—Royal Pointer 2d; 2, Carruthers & McFarland—Bandmaster 2d; 3, Hall—Rose Crest Baron; 4, Talmage—Belle's Champion 11th; 5, Wright—Wright's Plattsburg Duke.

Junior Yearling Boars: 1, Clark—Kintyre Laird; 2, Thatcher, Ennis & Williamson—Ames Rival 71st; 3, Carruthers & McFarland—Ames Rival 70th; 4, Pure Gold Stock Farm—Rival's Champion's Boy; 5, Humphrey—Fashion Longfellow 5th; 6, Talmage—Rival's Matchless Baron.

Senior Boar Pig: 1, Humphrey—Star Leader; 2, Thatcher, Ennis & Williamson—Ames Rival 106th; 3, Clark—Kintyre Duncan; 4, Warnock—Yakima Bacon 4th; 5, Carruthers & McFarland—Forest Grove Rival 4th; 6, Hall—Berryton Master of Rose Crest.

Junior Boar Pig: 1, Thatcher, Ennis & Williamson—Ames Rival 102d; 2, Warnock—Royal Kintyre; 3, Humphrey—Mayhews Leader 6th; 4 and 5, Wright—Wrights Columbia Duke and W. C. D. 2d; 6, Bunn—Yakima Sunrise 3d.

Aged Sow: 1, White—Robin's Ruby; 2, Humphreys—Premier Fashion 2d; 3, Thatcher, Ennis & Williamson—Rookwood Lady 59th; 4, Bunn—Yakima Robin; 5, White—Columbia's Model; 6, Humphrey—Master Rival's Princess.

Senior Yearling Sow: 1 and 2, Carruthers & McFarland—Rival's Pointer Star 13th and Forest Grove Laurel 2d; 3 and 4, Warnock—Daisy Lee 11th and 10th; 5, Steele—Berryton Belle 31st; 6, Talmage—Silbira Royal 3d.

Junior Yearling Sow: 1, Clark—Kintyre Bunt; 2, Thatcher, Ennis & Williamson—Rookwood Lady 96th; 3, Carruth & McFarland—Rookwood Belle 5th; 4, Humphrey—Fashion Longfellow Princess; 5, Carruthers & McFarland—Forest Grove Duchess 5th; 6, Humphrey—Grand Lady Mayhews 4th.

Senior Sow Pig: 1 and 2, Clark—Kintyre Shiela and Janet 3, Carruthers & McFarland—Rookwood Laurel 23d; 4, Humphrey—Grand Bernice; 5, Carruthers & McFarland—Forest Grove Laurel 4th;

Continued on Page 479

Save Money on Wire Fencing!

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Warner Fencing \$4.10, \$4.90, \$5.55 per Roll, for Stock and Poultry

This class of fencing is known all over the country and usually sells for considerably more. First placed on the market some ten years ago to meet the demand for a substantial combination stock and poultry fencing.

It is closely woven and made of No. 14 galvanized wire, the spaces between the wires being graduated from the small mesh at bottom to keep chickens in, to the regular stock fence mesh at top. Has heavy cable edge at top and bottom, which enables it to withstand sudden shocks without injuring the fence.

Ten rods to roll and sold in full rolls only.

Height inches	Approx. Wt. per rod	Stays in ches	Bars number	Price per roll
35	7	6	15	\$4.10
45	8	6	17	4.90
55	9.2	6	20	5.55

POULTRY FENCING \$3.25, \$3.60, \$4.30, \$4.90 PER ROLL—GRADUATED MESH—GALVANIZED

Has many advantages over the ordinary poultry netting, being three times as strong, does not require a top or bottom board, as the selvege wire at top and bottom may be stretched to give perfect close fit to ground, and the top affords no place for chicken to rest.

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Made of best quality No. 14 galvanized wire, height 26 inches; weight per rod 4.5; stays, 6 inches; with 7 bars barbed at bottom. Sold in 20-rod rolls only, \$5.

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These prices will apply only so long as this lot remains in stock, so get your orders in early as they will be filled subject to stock on hand.

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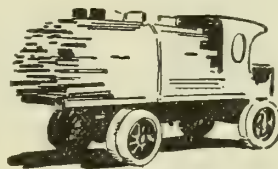
1-ply, double-sanded, per roll of 108 square feet	\$1.15
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3-ply, double-sanded, per roll of 108 square feet	\$1.65
1-ply "King" smooth, per roll of 108 square feet	\$1.25
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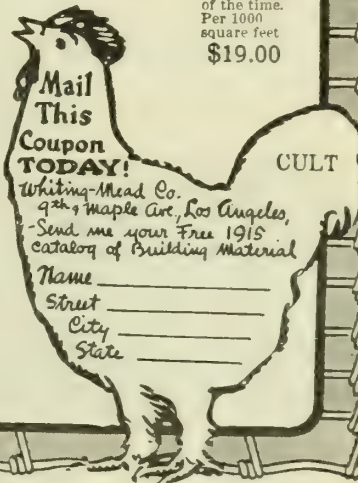


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HOUR BY HOUR

God broke our years to hours and days, that

Hour by hour

And day by day,

We might be able all along To keep quite strong.

Should all the weight of life

Be laid across our shoulders, and the future, rife

With woe and struggle, meet us face to face

At just one place,

We could not go;

Our feet would stop; and so

God lays a little on us every day,

And never, I believe, on all the way,

Will burdens bear so deep

Or pathways lie so steep

But we can go, if by God's power,

We only bear the burden of the hour.

—George Klinge.

PALESTINE AND THE ARMY OF LOCUSTS

By United States Consul Glazebrook, Jerusalem.

(The land of Palestine has just passed through a terrible invasion of locusts which has left groves and fields as bare as some of the battle torn fields of Europe. Our consul at Jerusalem writes of the losing fight waged against the invaders.)



THE recent devastation by locusts in Palestine will have disastrous effect on the people of the country, whose sustenance is thus destroyed. I have had to depend upon outside sources for some of the information, but the actual invasion, the result of the devastation, and the work of protection I have seen with my own eyes, and have aided in the latter by my personal assistance and advice. It is not an overdrawn metaphor to describe this inroad as an invasion. Truly the onward march of the serried ranks of the devastating insects was "more terrible than an army with banners." As far as the eye could reach, the fields were covered by the locusts, and even the street in front of the American consulate had the appearance in the movement of the green and black mass of a flowing river.

Such locust invasions are not unusual phenomena in Palestine. The last general and destructive visitation of the locusts occurred in 1865. Since then they have reappeared at different times in smaller numbers and limited areas, the last of these being some 11 years ago, but undoubtedly the disaster caused by the present visitation is not only greater and more general, but more profoundly felt than any in the recollection of the present generation.

On February 28, 1915, the first swarms of adult locusts were seen in the bordering "Judean Wilderness," but it was not until the early part of March that they flew over and past Jerusalem. These adults did little damage, but being of the largest and most devouring species of all migratory locusts, the same kind alluded to in that most graphic of all descriptions of such ravages, the prophecy of Joel, apprehensions were grave that the result would be most disastrous. These apprehensions have been fully realized.

As soon as the news of the locust invasion reached His Excellency, Djemal Pasha, Ottoman minister or the navy and commander of the Fourth Army, he vigorously grappled with the situation. He appointed a "central commission to fight the locusts" under the presidency of His Excellency, Midhat Bey, governor of Jerusalem. The field which the commission was to cover was the Sandjak of Jerusalem and the Vilayets of Beirut and Damascus, and this commission was officially attached to the headquarters of the Fourth Army, at Jerusalem. Dr. Aaron Aaronsohn, who is well known to the department

of agriculture at Washington, was appointed high commissioner for the above-mentioned provinces. This appointment promised well, as the doctor is one of the most scientific men in Syria and director of the Jewish agricultural experiment station of Palestine.

Under the direction of this commission an order was issued requiring every male residing in the cities from the ages of 15 to 60 years to collect 20 kilos (44 pounds) of locusts or to pay an exemption fee of one Turkish pound (\$4.40). This rule was so vigorously enforced, stores being closed if the owners could not show a receipt for eggs or cash, that about 800 persons paid the tax, while the others either gathered the required amount or purchased them from peasants who brought them in secretly for sale. In the village half of the inhabitants were compelled to go out each alternate day to dig for locust eggs.

Toward the end of May the larvae, already about an inch long, made their first appearance near Jerusalem on the plain of Raphaim and aroused the people to the necessity for immediate organized resistance. The method of procedure was to form lines of men, women, and children along the roads separating the private gardens from the open fields beyond, flagging the locusts. Tin-lined boxes were sunk in the earth in the direction in which the locusts were advancing. The flaggers would drive them together in a dense column toward the trap where guards at each end would keep them from escaping. Sometimes the drives were so large that the locusts would have to be shoveled into the boxes to make room for those pressing from behind. To protect the trees from the young crawling locusts pieces of tin or zinc, in the shape of inverted funnels, were tightly placed around the trunks of the trees.

In spite of all this fighting of the larvae instances are very rare where the results were satisfactory. Few crops or orchards escaped devastation. This was especially true on the Plain of Sharon, where the Jewish and German colonies, with their beautiful orange gardens, vineyards, and orchards, suffered most severely. The only exception was the orange gardens in Jaffa proper, which, doubtless, owed their immunity to the sea breezes. In the lowlands there was a complete destruction of the summer crops such as garden vegetables, melons, apricots, and grapes, for all of which the plain between Jerusalem and Jaffa is renowned and upon whose supply the Jerusalem markets depend. The result is that there are few vegetables or fruits to be had in the markets, and such as appear command an almost prohibitive price.

In the mountain district, notably about Jerusalem and Hebron, the heaviest loss from the onslaught of the locusts has been in connection with the olive groves and vineyards. Olive oil is a staple of food among the peasants and poorer classes, taking the place of meat. The grape, too, is a similar staple among all classes. The loss of this crop will be most keenly felt. This year, especially on account of the almost entire absence of sugar, now selling when obtained at a fabulous price, the grape crop was counted

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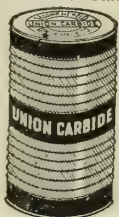
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You can pick out an acetylene lighted farm as far as you can see it. The light streaming from the windows is white and indescribably beautiful—the big round lights in the barns are wonderfully brilliant. Go in and look them over at close range. You will, in most cases, find all the "fixtures" equipped to light up with the pull of a slender chain—without matches—just like electric lights.

The cheerful housewife in every one of these acetylene lighted homes will tell you that her lights have banished forever the gloom of kerosene lamps, and all the labor and drudgery their use entailed. She will tell you also of the delights of cooking on an acetylene range in a cool kitchen—with no bother of kindling, coal, ashes or soot. There are now no less than a quarter of



In gray drums with blue bands

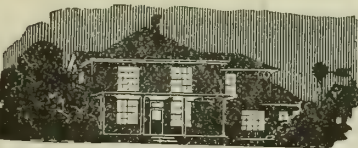


a million families using Home-made Acetylene for both lighting and cooking. In every case the gas producing stone—Union Carbide—is ordered direct from the nearest of our

warehouses, located all over the country. In the drums in which we ship Union Carbide it is as safe to store and handle as common coal. It won't burn and can't explode. The little machines which automatically release the gas from the Carbide are called acetylene generators. The newer models are wonderfully simple and perfectly reliable—they work with no attention other than filling once a month.

We will be glad to mail our advertising literature which we are sure you will find intensely interesting. Address

UNION CARBIDE SALES CO., Dept. 7
42nd St. Building, NEW YORK or
Peoples Gas Bldg., CHICAGO, ILL.



Let 'er Rain!

If you've a man's work to do, wear Tower's Fish Brand

Reflex Slicker
\$3.00

The coat that keeps out all the rain. Reflex Edges stop every drop from running in at the front.

Protector Hat, 75 cents

Satisfaction Guaranteed

Send for free catalog

A.J. TOWER CO.
BOSTON



BABY LAYETTES
Prices reasonable. Send 25c for sample of work, useful article

Mrs. Letah May Johnston
P. O. Box 307 Redlands, Cal.

KILL 4 RATS FOR 1¢
"RAT CURE" TABLETS

GUARANTEED OR MONEY REFUNDED
No other Animal or Fowl will touch it. No mixing, ready to feed from can. Drug, Feed and General Stores handle it. If not, write us, and give name of dealer. Ask for booklet No. 1. "GOPHER CURE" and "HEN LICE STA-OUT."

MORISRITE MFG CO. BLOOMFIELD, N. J.

upon as a substitute from which "dibs," a kind of molasses, and divers kinds of jams are made without the use of sugar.

Strange to relate, storks, which were always looked upon as the most effective enemy of the locusts, this year seemed to have been proportionately too few to have had a perceptible effect upon them. The common house sparrow and domestic fowls have doubtless devoured quantities of them, but here again the invading host was so tremendous that this natural help was not noticeable.

PEACHES PEELED BY LYE NOT INJURIOUS TO HEALTH

In spite of the idea held by many people that lye-peeled peaches are injurious to health, Professor M. E. Jaffa, consulting nutrition expert of the California state board of health, says that they are no more injurious than hand peeled fruits. Except for the marks of the knife on the hand peeled product, it is impossible to distinguish one from the other. Food value, flavor and quality are unchanged.

The process of peeling fruit by immersing it in hot lye, afterward washing several times with cold water, is used in many canneries throughout the state. The method is rapid and economical. Yet some people will not eat fruit that has been peeled by this process, fearing that it may be injurious to health. No question has been raised, however, concerning the use of the same process in preparing prunes for the market.

Analyses have been made, in order to learn if the acidity of the lye-peeled peach is less than that of the hand-peeled peach, and it was determined that the lye process does not affect the acidity of the finished product. The housewife then may be assured that canned peaches peeled by this process are wholesome and that there is nothing in them that may be injurious to health.

HOW TO FEED FAMILIES

How to feed babies, how to feed children, how to feed grown-up people—this is the subject of a new free correspondence course in "Adult and Child Nutrition," just announced by the University of California. The course was prepared by Agnes Fay Morgan, assistant professor of nutrition in the college of agriculture, and is open to everybody without cost.

The world is full of foolish and harmful fads and fancies regarding what to eat and not to eat. The object of the university in establishing this new course is to give people opportunity to learn authoritatively the plain common sense about what to eat and why. The course will explain the composition and properties of common foods, their relation to each other, their value in the body as producers of body-heat, and their power to do work, how the wear and tear of daily living and the growth of children call for building material to replace and construct body tissue, and how family dietaries should be planned in order that it may be certain a well-balanced variety is being provided and all the real bodily needs being met.

That is should be enjoyable is not the least important of the marks of a sensibly planned family dietary.

VEGETABLE RECIPES.

Scalloped Brussels Sprouts

Pick over, remove wilted leaves, and soak in cold water one quart of sprouts. Cook in boiling salted water until soft, then drain. Wash celery and cut in pieces; there should be one and one-half cups. Melt three tablespoons butter, add celery, cook two minutes, add three tablespoons flour, and pour on gradually one and one-half cups scalded milk; add sprouts and turn mixture into a baking dish. Cover with buttered crumbs and bake in a hot oven until crumbs are brown.

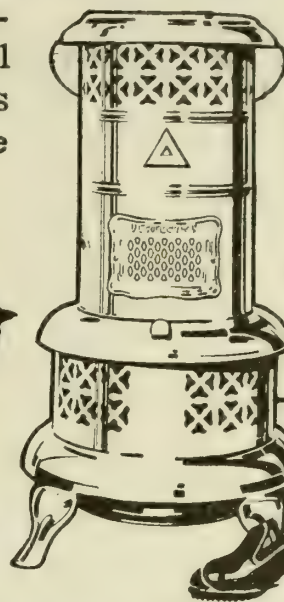
Cauliflower a la Huntington

Prepare cauliflower as for boiled cauliflower by removing leaves, cut off stalk and soak 30 minutes (head down) in cold water to cover. Cook (head up) 20 minutes or until soft in boiling salted water. Drain, separate in pieces and pour over the following

Continued on Page 479.

"Let 'er rain"

Whatever the weather outside, a good oil heater makes sunshine within.



Perfection Oil Heater

Inexpensive to operate—easily carried from room to room. Smokeless and odorless. Dealers everywhere. For best results use Pearl Oil.

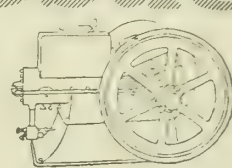
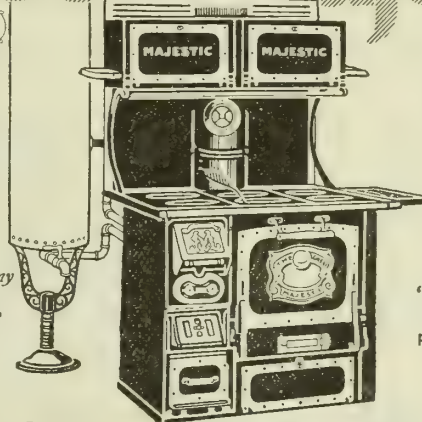
Standard Oil Company
(California)



Great Majestic



One quality—many styles and sizes—with or without legs.



Awarded
"GOLD MEDAL"
Highest Award
Panama Pacific Exp.
San Francisco

Judge a range the way you judge farm machinery

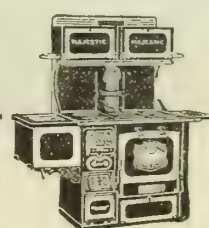
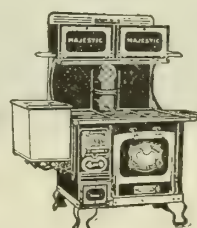
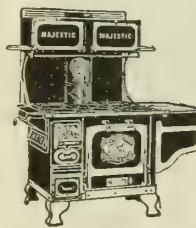
How well will it do its work? Is it built right, and of the right material? How economical to operate? Judged by these standards, the best is always the cheapest.

The Great Majestic Range is built for service—not for price. Every part is made of the best and most durable material—malleable iron, charcoal iron, copper, etc. Put together with rivets (not bolts and stove putty). Flues are lined with heavy asbestos board (not paper). That is why a Majestic bakes a full oven of bread brown—top, sides and bottom—without

turning, and with the least fuel—not for a year or so, but for years to come.

Majestic Ranges positively furnish more and hotter water than the ordinary range. Made with either left hand or right hand reservoir, or water front. The Majestic is the economical range, because it costs less in the long run.

The Majestic Range has many improvements that lighten the labor of cooking and add to its certainties. Examine the Majestic. There is a Majestic dealer in nearly every county of 42 States. If you don't know one, write us.



Write for Book.
Tells what to look for and what to avoid when buying a range. You can't judge a range by looks. You should know how they are made and why. Write for free copy
MAJESTIC
Manufacturing Co.
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For Every Purpose
NEW
Threads and Couplings
Hot Asphaltum Dipped

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Screw Casing
Fittings and Valves
Guaranteed for Pressure

Pacific Pipe Co. Main and Howard Sts.
San Francisco



San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Nov. 10, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras 26
Firsts 23

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts 46
Candled 48@50
Northern Fresh Extras, f. o. b. S. F. 55½
Prices to producers:
Hens, lb. 15@17
Roosters, old 9
Broilers, lb. 23
Fryers 15
Roasters, lb. 14
Turkeys 17@19
Ducks 14
Geese 11
Squabs, doz. 1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt. 7.00
Prime Steers 7¼@7½
Heifers 6¼@6½
Calves, lb. 9@9½
Sheep—
Ewes, head 4.50
Wethers 5.00
Lambs, head 5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug 55
Rurals 1.10@1.15
Maceds, cwt. 1.60
Idaho Russets 1.35@1.50
Northern Burbanks 1.35@1.60
Salinas 1.85@1.90

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz. 1.00@1.25
Beets, doz. 35
Beans—
Wax 5@5½
Limas 5½@6
Green 5@5½
Brussels Sprouts, lb. 11@12
Cabbage, sack 1.25
Northern, lb. 1½@1¾
Carrots, doz. 30
Cauliflower, doz. 65
Celery, doz. 75
Chicory, doz. 40
Chives, doz. 1.00
Corn, lug 55@60
Cucumbers, lug. 65@70
Pickling, lug 1.00@1.50
Egg Plant, lb. 3@3½
Escarole, doz. 90
Horseradish, lb. 17
Leeks, doz. 46
Lettuce, doz. 25@30

Mint, doz. 40
Okra, lb. 6@7
Onions, Green, bunch 20
Oyster Plant, doz. 40
Parsnips, doz. 35
Peas, Telephone 6½@7
Peppers—
Bells 5@5½
Chili, lb. 5@5½
Pimientos, lb. 6
Rhubarb—
Strawberry 1.00
Winter Crimson 85
Spinach, doz. 20
Squash—
Crookneck, box 40
Hubbard, lb. 1½@2
Summer, lug 40@45
Tomatoes—Lug 35
Turnips 40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower 1.10@1.25
Jonathans 1.50@1.85
King David 1.50@1.65
Pearmain, Red 1.10@1.15
Pearmain, White 1.10
Spitzenberg 1.35
Yellow Newtown Pippins 85@90
Bananas, lb. 4½
Berries—
Strawberries, basket 8@10
Blackberries, basket 8@10
Raspberries, basket 13@15
Cantaloupes—
Paul Rose, crate 1.75
Casabas, crate 1.75
Cranberries, bbl. 9.25@10.75
Figs—
Black 1.10@1.25
White 85@90
Grapes—
Black Hamburg, lug 75
Malagas, lug 1.10
Morocco, lug 1.00
Muscats, lug 85
Tokay, lug 1.35
Cornichon, lug 90
Red Emperor, lug 1.35
Guavas, lb. 6
Peaches—
Clings, box 65@75
Freestones, lug. 1.15
Pears, Bartlett, packed box 3.00
Winter Nelis, lug 1.00
Persimmons, lb. 8@9
Pineapples, lb. 6@7
Pomegranates, lug 1.00
Quinces, lug 50@75
Watermelons, lb. 1@1½

REANS

Wholesale selling price:
Limas 5.25
Lady Washington 6.25
Pinks 5.00
Black Eyes 4.00
Lentils 20.00
Manchurian Reds 4.00@4.25
Small White 6.00
Garbanzos 5.75

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow 2.00
Corn, White 2.20
Wheat 2.05@2.10
Oats, White 1.75

Oats, Hulled 2.25
Egyptian Corn 1.85
Kaoliangs 1.50
Barley Seed 1.60
Barley, Hulled 1.95
Kaffir 1.75
Milo 1.60
Sunflower Seed 6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal 1.25
Bran, Heavy 1.50
Alfalfa Molasses, per cwt. 1.35
Beef Scraps 3.00@3.16
Beet Pulp 1.25
Molasses Beet Pulp 1.20
Cracked Corn, cwt. 2.05
Cracked Wheat, cwt. 2.20
Cotton Seed Meal 1.90
Bone, Green 1.75@1.85
Meat Meal 3.00@3.10
Charcoal 1.90@2.00
Oil Cake Meal 2.50
Fish Meal 3.15@3.25
Rolled Barley 1.55
Rolled Oats 1.80
Middlings 1.80
O. & W. Middlings 1.80
Feed Meal 2.10
Scratch Feed 2.10@2.20
Oyster Shell 1.15@1.25
Scratch Gritlets 2.30@2.40
Poultry Mash, 90-lb. sk. 1.90@2.00

San Francisco Markets

SAN FRANCISCO, Nov. 9, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras 28
Prime Firsts 26½
Firsts 24

CHEESE

Wholesaler to retailer:
Young America 18
California Flats 13½@18
New York Cheddar 19
California Cheddar 16½
Oregon Twins 14½
Oregon Young America, fancy 14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh Extras 54½
Select Pullets 44½
Hens, lb. 13@17
Fryers 19@21
Broilers 22@25
Roosters—
Young 17@19
Old 8@10
Squabs 2.50@3.50
Turkeys 22@24
Dressed 20@27
Ducks 10@13
Geese, Pair 2.25@2.75
Belgian Hares—
Live Weight 8@9

LIVE STOCK

San Francisco prices, gross weight:
Steers 4@6½
Cows and Heifers 3@5½
Calves, lb., live wt. 6@9
Hogs 4@6½
Wethers 6@6½
Ewes 5@5½
Milk Lambs, lb. 7½@7¾

ONIONS

Wholesale selling price:
Onions, cwt. 85@1.00
Garlic 10@12

FRESH FRUIT

Wholesale selling price:
Apples—
Newtown Pippins 65@1.00
Pearmain, white 65@85
Jonathans 60@1.00
Bananas, Hawaiian, bunch 75@1.75
Cantaloupes—
Delta, lugs 30@50
Turlock 75@1.25
Cranberries, Eastern, bbl. 8.50@10.50
Grapes—
Cornichon 70@85
Malagas, crate 65@75
Muscat, crate 85@90
Seedless 1.00@1.50
Tokay, lug 50@75
Huckleberries, lb. 6@8
Pears—
Winter Nelis, box 75@1.75
Persimmons, box 60@1.00
Pineapples, doz. 1.25@2.00
Pomegranates, small boxes 75@1.25
Quinces, box 30@70
Raspberries, chest 5.00@7.00
Strawberries, chest 5.00@6.00
Watermelons, doz. 75@2.00

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated,

in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5¼c; 4-crown, 6c.

The above prices are for October, November and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.

Nonpareil 14½
IXL 13
Ne Plus 12
Drake's 10½
Peanuts—
Unpolished 3½@4½
Polished 4@5½
Shelled, China 5½@6

HOPS

Wholesale selling price:
Sacramento Valley 9@10½
Sonoma-Mendocino 10½@12½
Oregon-Washington 10@12

HAY

We quote the average wholesale prices for hay in carload lots on today's market as follows:

Fancy Wheat Hay (It bales) 17.00@18.00
No. 1 Wheat or Wheat and Oat 12.00@15.00
No. 2 Wheat or Wheat and Oat 10.00@11.50
Choice Tame Oat 14.00@15.00
Other Tame Oat 10.00@13.50
Wild Oat 8.00@10.50
Alfalfa 10.00@14.00
Stock Hay 6.00@8.00
No. 1 Barley Straw 25@40

GRAIN

Alfalfa Seed 16½
Wheat, Cal. Club 1.57½@1.65
Blue Stem 1.75@1.77½
Barley Feed 1.25@1.30
Shipping and Brewing 1.30@1.35
Corn, Eastern Yellow 1.62½@1.65
New 1.55@1.62½
Corn, Egyptian White 1.50@1.52½
Oats, Red, Feed 1.25@1.32½
Oats, Red, Seed 1.37½@1.42½
Oats, White, Feed 1.35@1.37½
Oats, Black, Feed 1.50@2.00
Millet 2½@3
Rape 2¼
Flaxseed 5@5½
Rye 2.00@2.25

FEED STUFF

Wholesale prices
Alfalfa Meal, car lots 16.50@17.50
Fran, ton 26.00@27.00
Feed Cornmeal 40.00@41.00
Cracked Corn 40.00@41.00
Rolled Barley, ton 26.50@27.50
Middlings 31.00@32.00
Shorts 27.00@28.00
Oilcake Meal 37.50@39.00
Cocoanut Oilcake Meal 23.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 9, 1915.

California's citrus shipping season ended at midnight October 31. The grand total of all citrus shipments was 46,685 cars, which, compared to the preceding year, that of 1913-1914, with 48,336 cars, shows a slight decrease. The coming year's crop is estimated to be somewhat shorter than that of last year. There are 500 cars of Valencia yet to go. Northern shipments of navels will not begin in time to reach Thanksgiving trade. The more general view of the season's operations will be found on editorial page.

Shipments

Shipments last year which began November 1, 1914 and ended October 31, 1915: oranges 33,317 cars, lemons 6843. Total from Southern California, 40,160; Central California: oranges 5670, lemons 223, total 5893; Northern California, oranges 630, lemons 2. For the year 1913-1914 Southern California, oranges 39,024, lemons 2954, total 41,978; Central California oranges 5878, lemons 73, total 5951. Northern California, oranges 402, lemons 5 cars.

NEW YORK, Nov. 8.—Eighteen cars Valencia, one car lemons sold. Valencia irregular; lemons unchanged. Weather fair.

VALENCIAS—
Tesoro Rancho, Red \$4.35
Partridge 2.95
Anaheim Supreme, S.T. Ex. 6.70
Mother Colony, S.T. Ex. 4.85
Wm. Tell, Or. Ex. 6.05
Golden Beaver, Or. Ex. 4.95
Carmencita, S.T. Ex. 4.65
Colombo, S.T. Ex. 3.65
Portola, S.T. Ex. 2.60
Atlas, Or. Ex. 5.15

SWEETS—
Tesoro Rancho, Red \$3.80
LEMONS—
Panama, ventilated \$3.50
Flower City 3.25

BOSTON, Nov. 8.—Seven cars sold. Market stronger on Valencia, unchanged on lemons.

VALENCIAS—
Squirrel, A.H. Ex. \$4.75
Prairie Chicken, A.H. Ex. 4.20
LEMONS—
Squirrel, A.H. Ex. \$3.85
Prairie Chicken 3.20
Pet, S.D. Ex. 4.45
Greyhound 3.05

Plow Now

Don't wait for rain
It may come too late



A 5 DISC "GROUND HOG," plowing hard, dry adobe—cutting 40 inches wide and 7 inches deep, hauled by a little H. P. Tractor.

6 Horses will handle our 4-Disc Plow in Dry adobe

By a system of weighting it works in hard ground where other plows fail to work. No need to wait for rain, making certain the ability to plow early, which is most important in these days of high prices. The "Ground Hog" is the acknowledged plow sensation of 1915

THE LOWEST COST REAL SMALL TRACTOR PLOW

Awarded Gold Medal, Panama-Pacific International Expo.

Write for Testimonials.

SPALDING-ROBBINS DISC PLOW CO.

461 Market Street

San Francisco

SHEEP AND HOGS AT P. P. I. E.

Continued from Page 475

6, Thatcher, Ennis & Williamson—Rookwood Lady 105th.

Junior Sow Pig: 1, Clark—Riverby Princess; 2 and 3, Thatcher, Ennis & Williamson—Rookwood Lady 107th and 108th; 4, Bunn—Riverby Princess 2d; 5 and 6, Thatcher, Ennis & Williamson—Oak's Lady Robinhood 3rd and Rookwood Lady 109th.

Senior and Grand Champion Boar—Grand Leader 2d.

Junior Champion Boar—Star Leader.

Senior and Grand Champion Sow—Kintyre Bunt.

Junior Champion Sow: Riverby Princess

Four the Get of One Sire: 1 and 2, Humphrey—get of Grand Leader; 3, Clark—get of Kintyre Duke; 4, Thatcher, Ennis & Williamson and 5, Carruthers & McFarland—get of Rival's Champion's Best.

Produce of Sow: 1, Clark; 2, Thatcher, Ennis & Williamson; 3, Bunn.

Old Herd: 1, Humphrey; 2, Thatcher, Ennis & Williamson; 3 and 4, Carruthers & McFarland; 5, White.

Young Herd: 1, Humphrey; 2, Talmage; 3, Wright.

Exhibitor's Herd: 1, Humphrey; 2, Thatcher, Ennis & Williamson; 3, Clark; 4, Thatcher, Ennis & Williamson; 5, Bunn.

Barrows, Yearlings: 1, 2, 3 to Hopland Stock Farm; pigs: 1, 2, 3 to Warnock.

Premier Exhibitor: Carruthers and McFarland.

Premier Breeder Exhibitor, A. B. Humphrey.

Chester White Hogs

Only one herd was on hand to represent this popular white breed, that of Ed. Schoel, Albany, Oregon, but this, with Fred H. Moore of the White Breeders Companion of Rochester, Indiana, the official Chester White magazine, kept the Chesters on the map. Over 25 carloads were scheduled to have come from the Middle West.

Chester Whites are growing rapidly in popularity in the East. They have made a greater gain in numbers at the big Eastern shows during the past few years than any other breed. We have many good Chesters in this state and Mr. Moore says we are going to have the number greatly increased. We heartily commend the broadmindedness of a representative of a breed who will come across the continent to a show where only one herd is shown. Breeds which have such men looking after their interests come to the front rapidly.

Large Yorkshires.

This breed was represented by the splendid Riverina Farms herd of Modesto, owned by Alex. D. McCarthy, San Francisco.

Mr. McCarthy believes in the future of the bacon hog in California and fitted his herd expecting to meet strong competition from the East. He has some of the best individuals in the breed and is well worthy to receive the special prizes offered by the breed in addition to the regular prize money. Prof. J. I. Thompson of the Davis University Farm made the awards.

Essex Swine.

One herd of Essex swine was shown by W. H. Cleveland, Gresham, Oregon. This is a breed not commonly seen. The individuals are all black with upright ears and very compact, neat and symmetrical bodies. It's one of the smallest of the fat breeds.

The Duroc-Jerseys.

When prominent Eastern breeders

Exterminate Squirrels

GOPHERS,
PRAIRIE DOGS, BORERS, ANTS,
RATS, ROOT APHIS, ETC.



USE

Carbon Bisulphide

It is absolutely effective, and leaves no injurious effect if inhaled while handling.

Use NONPAREIL for killing Morning Glory.

**WHEELER, REYNOLDS
& STAUFFER**

624 CALIFORNIA STREET,
San Francisco, California.

come to the coast and pay \$1,000 for a boar, California is surely a good breeding ground. It shows that we have the right sort of blood and that our conditions are right for producing them. H. E. Browning of Hersmann, Illinois, and J. J. Doty, Shenandoah, Iowa, two of the best breeders in the East, paid Maurice Rucker of Fair-oaks that price for Tax Payers Thirteen, first prize junior yearling, senior and grand champion of the show. Rucker showed only two head—this boar and a junior sow pig born in December. He won third in class on her.

Elmer Lamb, from Ceres, had junior champion on his junior sow pig and reserve grand champion. He also had seventh prize pig. He won second on senior yearling sow and sixth on under year boar. The junior pig that was made champion was born March 5 and weighs 220 pounds.

J. K. Fraser of Denair showed only pigs and won a reserve grand champion and junior champion, first and third on under year boar; second, third and fifth on under year sow; second and fourth on junior boar pigs; third and fourth on junior sow pigs; first on young herd, first and sixth on get of sire and the same on produce of sow.

J. E. Thorpe, Stockton, had first prize aged boar, third junior yearling boar, fourth and fifth aged sow, third senior yearling sow, second aged herd and second aged exhibitor's herd.

Other extensive winners were E. N. Manley, Lyons, Nebraska; C. A. Hoover, Gervias, Oregon, and David Brown, Spokane, Washington.

The ribbons were tied by Prof. H. W. Mumford of the University of Illinois, who was very much pleased with many of the entries. Some should have been in higher condition to have won in the Eastern shows.

The two Duroc associations were ably represented by R. J. Evans of the American, Chicago, and J. R. Pfander of the National, Peoria, Illinois. Both admit that they made a mistake in not maintaining a view herd, but they had anticipated a big Eastern show here in the fall and believed that the demand for Eastern-bred stock would be supplied at that time.

The Duroc-Jersey is a great breed and because of its prolificacy, good rustling and growing qualities is becoming very popular in California.

Hampshire Swine.

"There were some of as good Hampshires shown here as are to be seen anywhere—some of the best herds of the breed were here. No more good ones were brought out at the big Eastern shows this year—it was a credit to the breed"—this is the way H. E. Browning of Hersman, Illinois, a prominent Eastern Duroc breeder who had charge of the ring for the Hampshire show, sizes up the show of this breed.

Over 100 were shown and the prizes were well distributed among the following herds: Eaton & Hughes, Santa Rosa; J. M. Fruits, Enterprise, Oregon; E. N. Manley, Lyons, Nebraska, and Walter T. Gatton, Gardena.

Hampshires are very hardy, useful hogs and very economical pork producers. We are fortunate in having in California some of the best of the breed.

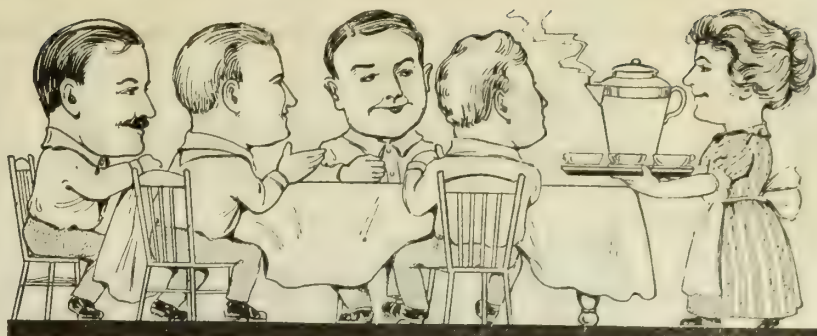
VEGETABLE RECIPES

Continued from Page 477

sauce: Mix one and one-half teaspoons mustard, one and one-fourth teaspoons salt, one teaspoon powdered sugar, and one-fourth teaspoon paprika. Add yolks of three eggs slightly beaten, one-fourth cup olive oil, and one-half cup vinegar in which one-half teaspoon finely chopped shallot has infused five minutes. Cook over hot water until mixture thickens. Remove from fire and add one-half tablespoon curry powder, two tablespoons melted butter, and one teaspoon finely chopped parsley.

Corn a la Southern

To one can chopped corn add one-half cup chopped pimiento, two eggs slightly beaten, one teaspoon salt, one-eighth teaspoon pepper, one and one-half tablespoons melted butter, and one pint scalded milk; turn into a buttered pudding dish and bake in slow oven until firm.



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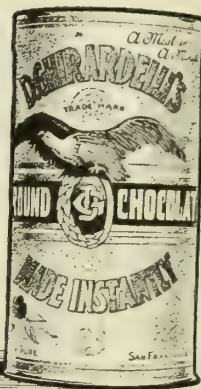
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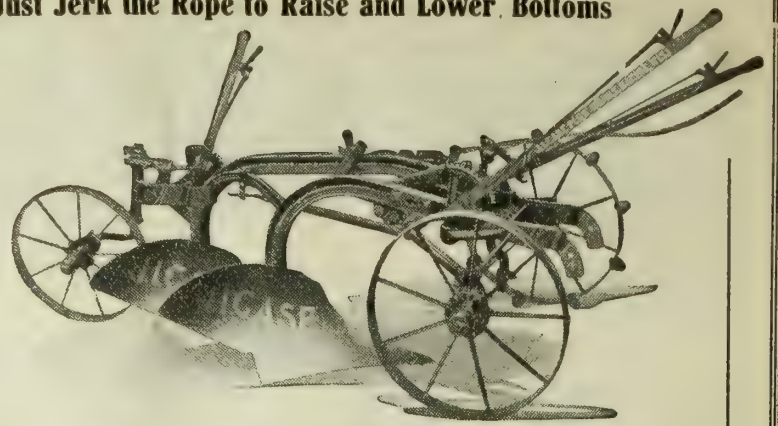
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An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

November 18, 1915

SAN FRANCISCO



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For \$3.95 we will send you freight paid a selection of ten best grade 4/6 feet Deciduous fruit trees, including one grafted Walnut. Leave it to our judgment and we will give you a fine selection of the best varieties for home orchard. Or, give us your suggestion as to the varieties desired. This is an exceptional opportunity to get ten fine trees of choicest varieties of fruit for your home orchard delivered at your postoffice at a minimum cost.

Write us for our list of combination offers for home planting and our free booklet on California Fruit which gives you an accurate description of each variety.

We have also a complete assortment of all varieties of citrus and deciduous fruit trees and vines.

Prunes

Selling now at a 5c basis, are again demonstrating that of all fruit grown they are the most stable for profit. There is always a shortage of trees in FRENCH, IMPERIAL, ROBE DE SARGENT, SUGAR AND STANDARD ON MYROBOLAN ROOT. These are the best selling varieties this year and there will again be a shortage. We have a fine block of trees on Myrobolan root in each of the varieties named—foothill grown—selected in propagating—fine, hardy trees.

Write us for prices and get your order in at once while the trees can be reserved for you.

Cherries

Cherries are great money-makers in California, and on locations adapted to their culture they are as good as you can plant. There is often a shortage of trees in the best varieties. We have a good stock on both Mahaleb and Mazzard root, and if placed now can take care of your orders in any of the following: ROYAL ANNE, EARLY BURBANK, EARLY CHAPMAN, EARLY PURPLE GUIGNE, BLACK TARTARIAN, BING, LAMBERT AND BLACK OREGON.

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When you buy a Walnut, more than any other tree, in view of the variations from the true type, you want a tree pedigreed and true. Our scions of Franquett and San Jose Mayette are cut by the pioneer walnut expert of the State, R. Wiltz of San Jose, and from trees he has had under his personal observation for years and which are of the true type and selected for performance. This is the highest pedigree given a walnut. Write us at once for full information and prices.

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We have a complete assortment of every standard variety of Shipping Plums on Myrobolan root, Bitter Almond and Peach root. Write for our catalog, giving complete and accurate information concerning every variety of Shipping Plums. Let us have a list of your wants for prices. Place your order now while our assortment is complete.

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Almonds

Are in great demand and there will be a shortage. We have a fine block of trees on Bitter Almond and Peach root.

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This year's crop suffered from war conditions, but canners are cleaned up and are sorry now they did not make a larger pack. Bear in mind the California Clingstone has a monopoly of the world's market for canned peaches—regularly productive, can be successfully grown nearly everywhere—a good money-maker in the past and will keep up this record in future. OUR IMPROVED TUSCAN is preferable in every way to the common Tuscan in the following features:

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A seedling from Phillip Cling, and has all the desirable features of that splendid variety. Ripens immediately after the Tuscan, filling the intermission between the Tuscan and Phillip when canners are running light and always command a premium. Identical to Phillips in quality and productiveness.

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Our Phillips Cling are of the true type and but one generation removed from the Phillips Cling first introduced. Very few are aware of the fact that the Phillips Cling, as commonly propagated, is deteriorating from the true type in the successive propagations.

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Vol. XLV No. 21

LOS ANGELES: THURSDAY, NOVEMBER 18, 1915

One Dollar Yearly

Making Dates

Riverside County Chamber of Commerce Meets at Indio and Thermal.
Delegates from Outside Sections are Given Ideas
as to Date Growing



If one wishes to see enthusiastic Californians let him go to the Coachella Valley. Anticipating the question, especially from those of our subscribers in the northern end of the state, "Where is the Coachella Valley?" we will say it is a part of the Colorado "desert." It is a low-down sort of place, being entirely below sea level. In some sections it runs nearly up to sea level, in others much more than 200 feet below. The sunset route of the Southern Pacific has traversed this desert for many years, and it was deemed true to name until something over a dozen years ago when some prospectors conceived the idea of determining whether water

This combination of land and water produces onions, sweet potatoes, asparagus, melons, eight or ten cuttings of alfalfa per year, figs, dates, almost every product of the earth. So when Riverside County started its chamber of commerce it found hearty support in the Coachella Valley, for the people were the kind that wished to see advancement in the community and they believed in cooperating with their neighbors. The Riverside County chamber of commerce, by the way, is a representative organization with a membership from nearly all sections of Riverside County. It encourages the get-together spirit, and the meeting at Indio and Thermal was the third in a series of meetings, and I

from date of planting the seed. At Mr. Northrup's place we were told to be free to eat all the dates we wished, and it is safe to say that his stock of dates was materially decreased as a result of the visit.

The beautiful ranch where dates were given perhaps the first test was that of Mr. Fred Johnson who planted his first offshoots some ten years ago and has one date tree illustrated in the larger figure on this page, which last year netted him over \$300. It will be noted in the photograph that there are no dates on this tree this year, which may indicate that the date, like other trees, will not bear enormously big crops every year. However, this is a matter which only years can determine. The other three trees in this picture are all loaded with fruit this year, as they also bore fair crops last year.

On Mr. Johnson's ranch are fig trees 11 years old with trunks two and three feet in diameter and with great branches which would support a whole flock of children and give finest of shade as well.

The next, and one of the most interesting places visited, was the government gardens and experimental plant in charge of Mr. Bruce Drummond. For 11 years Mr. Drummond has been investigating the possibilities of date culture. He is an enthusiast, better, he is one who makes careful investigation and is willing to state the truth in referring to the drawbacks as well as to the satisfactory features of date culture. Mr. Drummond grants that the finest of all dates is the Deglet Noor, or the moist, rich date. It will probably command the highest prices in the market, but at the same time he insists that a date of the Thuri type is due to have a greater future in the American market. This date is a medium sized one, dry and almost as hard as a bone, but at the same time it contains an exceedingly large per cent of sugar. It is so dry and hard it may be carried in the pocket without injury or thought of its soiling anything with which it comes in contact. Almost every particle is digestible, and its analysis shows it to be extremely rich. Unfortunately, there are very few offshoots of this variety



Mr. Dudley and a Bunch of Riverside County Boosters with Fig Trees in Background.

At the Right the Large Group is Made Up of the Attendants at the County Chamber of Commerce Meeting at Indio and Thermal. This Was Taken on Mr. Johnson's Place and Three of the Palms Are Loaded with Dates. The Other in the Foreground Bore an Immense Crop Last Year.

might not underlie those lands. At that time it was the writers' pleasure to visit that desert country—and it was indeed a desert—but the wells which were being sunk almost in a day were working wonders. The drilling apparatus was almost entirely of the hydraulic type, and once started the pipe with the water pressure would force its way so deeply into the earth that soon the freshest, coolest and finest water on earth was coming to the surface. "But the desert is hot?" Very true, but this heat insures some of the earliest and most profitable crops of any section of the world. This has brought into the valley a most enterprising bunch of Americans to develop a little empire.

believe the one that secured the largest attendance.

At the evening meetings in Thermal the church in which the meeting was held was packed. There was discussion as to community needs and means of obtaining them. Of course there was music by local artists and it was well rendered.

Preceding the evening meeting the cordial hospitality of the people of the valley was shown by an automobile ride tendered all visitors. We were taken to the ranch of Mr. J. H. Northrup who has 40 acres in bearing date palms. Mr. Northrup is a believer in the seedling palm, and the best of it is these palms are bearing at from three to four years of age



Upper Picture Shows Mr. Northrup's Incubator or Ripener. Lower is Mr. Johnson, a Pioneer in Date Culture.

of date to be secured in Africa and the only hope of large increase is through production of seedlings.

As noted above, the Coachella Valley people are some enthusiasts. The ladies of the valley showed their enthusiasm and hospitality by providing for the visitors a quail dinner which was in reality a banquet. In addition, at almost every turn on the trip during the afternoon date tarts or date fruit or delicious drinks were dispensed to visitors. These were so thoroughly enjoyed that the ladies were asked to give to Cultivator readers formulas for cooking or preparing dates for the table. Recipes for these may be found on the household page of this issue.

The next meeting of the chamber of commerce will be held at Elsinore in December.

Cooperative Fruit Marketing

Address Before the 46th State Fruit Growers Convention
By H. G. Johnson, President of the State Farmers Union



FOR the purposes of this paper farm products may be divided into two classes: perishable and non-perishable; each class presenting its own problems. I will consider only the non-perishable products, the marketing of which continues during the whole year; and will touch upon some of the points involved as far as time will permit.

The United States government has at last awakened to some extent to the gravity of the situation, and the businessmen of the small cities of California are exerting every effort to improve conditions, so that it is hardly necessary to argue that there is some-

thing radically wrong and that improvements should be made. My conviction is that cooperative marketing would overcome a great many of the present ills, even if it did not wholly solve the problem.

The enthusiast expects phenomenal results at the outset, not realizing that his organization is a new one which must establish confidence, work up business and overcome one thousand and one other difficulties, just the same as any other new enterprise; and when his expectations are not fully realized at once he becomes first discouraged, then indifferent, and finally withdraws from his organization.

Some believe that we must deal direct with the consumer, without a distributing organization. This idea is erroneous and it has rarely been accomplished in any line. When the consumer has been reached by the producer as in the case of the Standard Oil Company and a few others, they have a complete distributing organization which has been established at an enormous expense. I have listened to arguments where the speaker believed that we could market our raisins, prunes, oranges, etc., by parcel post; but when asked what kind of an equipment Uncle Sam would need, he replied: "That is up to Uncle Sam." The obstacle to such an

arrangement is the cost of transportation. The housewife who buys in small quantities will not send across the continent when her corner grocer can supply her even at a greater cost. So in time the producer who cannot carry out his pet idea of "Producer to Consumer" also withdraws from his organization.

There is another class of farmers that is opposed to cooperation because the full amount of cash is not forthcoming at the time of delivery. It is this class that keeps alive all the speculation and gambling in farm products. It must be borne in mind that when a man or corporation is

Continued on Page 489

Citrus

and

Tropical

Fruits

FUMIGATION

Written for California Cultivator

By G. W. Waterbury



UNQUESTIONABLY predacious scale insects cause more rapid deterioration of citrus groves than any other one factor. Other factors are important and in time will cause loss of strength to the trees and financial distress to the owners, but the depreciation, to my mind, comes first through the work of the various scale insects.

We know that certain scales will kill the wood and that all degrade the fruit, and as the sap is lifted by millions of almost microscopic insects from the sappy veins of the tree loss of nutrition takes place, and no matter how well cared for the ground the trees deteriorate. The symptoms are those of a hen covered with lice; there is barely enough energy left to support life, leaving little for productivity.

Realizing the need of scale eradication the pertinent question is how to control it economically. The ideal way would be to let other insects war upon those at variance with the interests of mankind. This has been thoroughly tested and found unsatisfactory; the warriors do not work as fast nor multiply as rapidly as the thrifty armored scale insects. Artificial means must then be resorted to to save the trees.

Citrus trees are host mediums for destructive insects in proportion to the amount of sap running in the tree during the entire year. Thus the lemon and pomelo are the best liked by the scale family. Spraying would be the ideal way of killing scale were

it not that the citrus trees are always foliated.

In considering the scale question orchardists should get certain fundamental points firmly fixed in their minds; namely that every planting of citrus trees attaining commercial importance in every portion of the world eventually becomes infested with some kind of injurious insects; that once infested the orchards are never entirely freed from all scale of a destructive nature; that the best formula for attacking such insects should be firmly held to until the inventive genius of mankind clearly proves, and proves beyond question, that a new method is more sure of better results.

From checks made by Mr. de Ong in spraying citrus trees this summer it was found that but 50 per cent of a kill resulted. As efficiency is always a matter of percentages a kill of but one-half or even two-thirds is of little merit. By the cyanide process over 95 per cent are killed and this is not enough to carry the trees for two years with safety in lemon and pomelo orchards.

The all important question before the practical fumigator today is that of hatch and resistance. Should the black scale, for instance, change its time of periodic breeding so that the young do not all come out in the fall, but tend to overlap, then orchardists in the black scale districts will be forced to fumigate more often, an added expense to an already overcrowded yearly budget.

Then in some districts comes the question of resistance. The scale is not as easily killed as it was some years ago, and this in spite of the fact that fumigation and spraying are more

carefully practiced than formerly. Fumigating machines are delivering more accurate amounts of cyanogen gas to each 100 cubic feet of space under each tent; the men are better trained for their work and tents are more often inspected and the details of the work far better looked after than occurred a few years ago.

Of all the scales the red, when developed on the fruit, is unquestionably the hardest to kill. This is so in the Corona district where the red is gradually driving out the black; taking possession of the entire field as it were. Groves that once become thoroughly infested are many years in recovering, and one to two fumigations a year are necessary to preserve fruit wood.

Similar results are also noted in spraying where constant application of the different oils fails to bring the same results after some years of trial on citrus trees. While the cost is great, yet unquestionably it pays the orchardists well to fumigate when it is time. By this I mean by careful supervision to know just what the scale is doing all the year round. It is my experience that chronic infestation, resulting from stretching the interval between fumigations to too long a period, is quite similar to any chronic illness to which a doctor might be called to prescribe for a human being. In other words "an ounce of prevention is worth a pound of cure" applies to fumigation as well as to other affairs in life.

To the experimental station officials should be left the all important work of checking up on any and all new developments in scale eradication work. They have the time, the knowledge and the scientific instruments for thorough work, and if they do not devote a certain amount of time to the practical side of fumigation work they are neglecting a phase of citrus work which is costing the growers more money and more mental distress than any other at the present time.

There is a project now being started for the securing of a packing house in Turlock to handle the dried fruit product of the district.

LEMONADE

Some weeks ago the Cultivator made extensive reference on editorial page to lemonade and its disappearance from the bills of fare of practically all soda fountains and made comparison of its healthfulness over other drinks which are largely advertised. This called for comment by Mr. Henderson of Riverside, as follows:

"In the issue of the Cultivator of September 30, in your editorial on 'Lemonade', you wonder why so much more of a certain advertised drink is sold than lemonade. The answer is easy. The above-mentioned drink is sold at five cents, while lemonade is never less than ten cents and oftener fifteen cents, on account, dealers say, of the extra labor of extracting the juice and the cost of sugar. If the by-products companies connected with the California Fruit Growers' Exchange and other extract houses will put up pure lemon juice in earthen crocks or kegs and sell it to soda fountains at a price that will enable them to make a profit at five cents your problem is solved. The present price of lemons ought to make this commercially possible."

This induced us to take up the matter with the California Fruit Growers' Exchange and with the Fruit Growers' Supply Company which is largely interested in the citrus industry. From them we have the following:

"There is no question but that the use of lemonade is greatly restricted on account of the trouble and expense of making it at the stands, which causes them to put a higher price on it than for other soft drinks. If it were possible to put out a bottled lemon juice this would overcome the difficulty to a considerable extent, but to date no one has discovered a way to bottle lemon juice that will keep, although the government laboratories, the state university and many private parties have been experimenting with it. There are some properties in lemon and orange juice not present in grape juice, pineapple juice, etc., that preclude its keeping in its natural state. Sterilization at a temperature neces-

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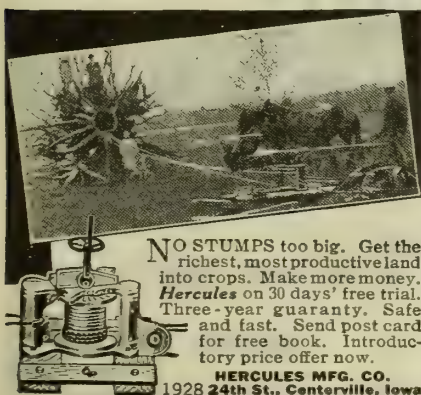
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sary to overcome this gives the juice
a burnt taste, and where these mat-
ters have been removed by sufficient
defecation, this has also removed the
coloring matter and everything else
that would make it look and taste like
lemon juice.

"Someone, undoubtedly, is going to
work this out, and we believe there are
great possibilities in an orange and
lemon juice proposition whenever the
juice can be put up in its natural state
so that it looks and tastes like a fresh
product, and will keep."

We hope this will lead to a general
agitation of the subject. It may be
that the lemon juices which are being
processed at several establishments
handling waste products of citrus
orchards will prove satisfactory to
soda fountain people. If so there is
no reason why this most healthful of
all drinks should not be given more
prominence, but even if the prepared
juices are not acceptable there would
be no great amount of labor involved
in the preparation of each day's sup-
ply of the fresh juice, thus inducing
greater consumption of lemonade.
This would benefit the producer and,
still more, help to change the "drink-
ing" habits of many who may find a
more satisfactory drink in pure fruit
juices.

SPRAYING TO PREVENT BROWN ROT DECAY

The brown rot, as is well known,
is due to a fungus that lives from
year to year in the soil, and when
long periods of rains and humid
atmospheric conditions occur the
fungus is able to multiply sufficiently
to infect the fruit. This is thought
to occur principally by the splashing
up of spores in the rain drops from
the surface of the soil or by first get-
ting on fruits that touch the soil.

Our suggestion would be:

To gather all the affected fruits at
any time under the trees or that are
rotting on the lower limbs and either
haul them off and destroy them or
throw them in the middle of the row
where the sun can dry them out. The
brown rot fruits should be gotten out
from under the trees not only to avoid
increasing the amount of brown rot
for next year, but to avoid a possible
increase of gum disease, as it is now
known that the brown rot fungus also
causes the gum disease, especially of
lemon trunks (not the scaly bark gum
disease of oranges), when the soil is
excessively wet or piled too high
about them. This is true particularly
of heavy soils.

Every fall before or soon after the
first heavy rains and after fumigation
if possible the ground under the
trees, the lowest branches if they
touch the ground, and the trunk may
be sprayed with Bordeaux mixture
(about a 4-5-50 formula), to prevent
infection from the fungus. If the soil
or vegetable mulch has piled up too
high against the trunk this should be
pulled away for a short distance so as
to allow the spray to get down as far
as the top of the first main roots and
to allow the bark to dry out between
rains. This will avoid most of the in-
fections of gum disease which often
occur during the winter and spring
rains and do not show above the soil
until two or four months later. This
applies especially to low budded
lemon trees on heavy soils, but may
also apply to orange trunks to some
extent. Where the soil is particularly
heavy and the trees are subject to
brown rot gum disease it is often ad-
visable to paint all the trunks with
Bordeaux paste in the fall before the
rains come on to prevent gum disease.
Formula for Bordeaux Paste

Dissolve one pound bluestone (cop-
per sulphate) in three quarts of water
in a wooden or earthen vessel. This
can best be done by hanging it in a
sack at the surface of the water.

Slake two pounds unslaked lime in
about three quarts of water.

Stir together when cool, making a
light blue mixture the consistency of
whitewash. If the mixture turns to
some other color before being applied
it is an indication that something is
wrong. Mix up fresh each day or two
as the mixed paste tends to deterio-
rate. It may be applied with a large
brush like whitewash.

This may also be used on healthy
bark as an additional preventive.—By
R. S. Vaile, Asst. Prof. Orchard Man-
agement. Adapted from Work of R.
E. Smith, H. S. Fawcett and others.



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THIS bag is designed
specially for the pick-
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fruits.

It holds about one-half
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HIGH STANDARD FOR CALIFORNIA WALNUTS

Written for the California Cultivator
By J. G. Berneike

WITH the growth of the walnut industry in California it has become necessary to raise the standard of the merchantable walnut lest the consuming public should be found unwilling to buy the increasing supply, for it is plain that the demand for an inferior article would soon find its limit, whereas the supply of California walnuts is yearly increasing because of increased acreage and bearing surface of trees.

Therefore the aim of every walnut grower must be to produce the best of walnuts—which would form a story by itself—and to take such good care in harvesting that only good nuts shall find their way to the consumer. For when the consumer buys a walnut he "buys a pig in a bag." The grower must see to it that the pig is the kind that the consumer wants. The housewife who has bought a pound of California walnuts must not find reason to become disgusted with them because a large portion is bad.

Realizing this as an important factor affecting the entire walnut industry of California, the associations have set a high standard on their output of walnuts. The soft shells must stand a cracking test of 85 per cent, and the budded nuts must test as high as 90 per cent.

When the grower arrives with his load at the door of the packing house the foreman cracks a sufficient number of his nuts to satisfy himself that

the load is likely to average according to the requirements of the test. If the test can not be passed the grower is requested to take the load home for resorting. If resorting fails to bring them up to the test they are accepted as off-grade or as culls, as the case may be, and disposed of and paid for accordingly. If the load passes the test, the walnuts are taken in, graded, bleached, culled and dumped in bins to dry, after which they are sacked and loaded on the cars for shipment. A final cracking test is made of each carload, and if it fails to come up to the guaranteed standard it cannot be shipped out under the association brand. The Diamond brand of the California Walnut Growers' Association on a sack or package of walnuts is a guarantee to the buyer that the average of the nuts comes up to the standard test and will often exceed it.

Quite recently, while walking along Broadway in Los Angeles, I saw exposed in a fruit store, which seemed to have otherwise fine fruit, a sign like this: "New 1915 crop walnuts, 10 cts. a pound." As I looked at them I saw that they were culls. At 10 cents per pound they could be nothing but culls, such as one of my neighbors sold to a peddler at three cents per pound. Who ever buys them will become so disgusted with walnuts that he will want to buy no more of the 1915 crop. Had they been properly and correctly labeled: "Cull walnuts, 10 cts. per lb.," the customer would not expect good nuts and would not become disgusted, but would probably call for good quality walnuts the next time and be willing to pay the right price for them. It may be within the jurisdiction of cities to establish a

standard for walnuts to be enforced by the food inspector.

The question is: What can and what must the grower do that such walnuts may not reach the market to spoil future sales?

The only proper remedy that suggests itself to my mind is that the grower shall not sell his culls unless he is assured that they will be cracked and sold as walnut meats. Therein all growers must cooperate because the sale of cull walnuts as good walnuts to the unsuspecting consumer would soon limit consumption.

APPLE ANTHRACNOSE

This disease is known to occur on the Pacific Coast west of the Cascade mountains in Oregon, Washington and British Columbia, and has more recently been reported in the south central part of Washington and British Columbia, also. Frequently it is the matter of inquiry by orchardists in the eastern and central parts of the state. In order to acquaint the grower with the nature of the disease, its effects, and methods of control, the following statement is issued by Mr. D. C. George, assistant plant pathologist of the experiment station at Pullman.

Apple anthracnose, or black spot canker, manifests itself as a twig and branch canker on the apple and pear, and as a storage rot on the fruits of the apple and quince.

The twig and branch form appears as dark colored, sunken areas or cankers in the bark of the younger growth. It is especially injurious on branches under two or three inches in diameter, only occasionally being found on the thick bark of the larger branches. Frequently several of these cankers coalesce and completely girdle the branch. Young trees are sometimes killed by this girdling.

The young cankers begin their development in the fall, usually about the first of November. They appear on the bark as small, circular spots, reddish-brown to black in color. Beneath these spots a water soaked appearance is noticed, which extends to

the cambium layer. During the winter months development is retarded but becomes vigorous with the renewed activity of the host in early spring. As the spots enlarge they become elliptical in shape, more or less depressed and smooth, and the bark dries and slightly cracks at the advancing edge. The cankers are mature in size by the last of June or a little later and vary from one-quarter of an inch to six inches in length by one-quarter of an inch to five inches in width. About this time small elevations or pustules, more or less conical in shape, appear in the cankered area. Later, about midsummer, these pustules crack open and expose the spore-bearing mass of fungous tissue. In the late autumn the cankered area is separated from the healthy tissue by a slight ridge due to the formation of callus. When the canker becomes old, usually the second year, the bark cracks away from the edges, becomes loose and drops out, leaving unsightly scars.

As stated previously, the disease is known to cause a storage rot of the fruit. It first appears on the surface as small, light brown, circular spots of rotting tissue. These spots generally enlarge and later change to very dark or black, eventually becoming dry, depressed, and rather tough. Pustules similar to those formed in the cankers soon develop, quite commonly making their appearance in concentric circles.

Anthrachnose is caused by a parastic fungus known as "Neofabraea malicorticis." It produces two kinds of spores or reproductive bodies. The summer spores, or conidia, are formed during the first year of the development of the canker. They are mature by late summer or fall and are ejected in a gelatinous mass from each of the small pustules found on the cankers. These spores are readily separated by water, rain, dew, or certain summer sprays serving as agents in this respect. On being liberated they are scattered by various agencies and each one is capable of producing a new infection.

The winter spores, or ascospores, are developed the second year, within small, club-shaped structures borne

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in disk-like bodies that occupy the position of the pustules of the previous season. Following the fall rains these spores are discharged with force and are carried away by the wind. Like the conidia, upon germination, they are capable of producing new infections.

It has been found that conidiospores are also developed from old layers around the edges of the pustules producing the ascospore stage and also in the bark of cankers three years old. If the bark drops to the ground at the end of the first year, the winter spores may be developed in such bark on the ground.

Thorough spraying and pruning are essential in order to control the disease. The spraying should be done immediately after the fruit is picked, as at this time the spores are most abundant and new infections most likely to take place. The 6-6-50 bordeaux is recommended. If the fall rains begin early and the trees are harboring old cankers, an additional spraying, about three weeks later, is advisable.

Too much emphasis can not be placed on thorough pruning. It is advisable, where possible, to do this before the first spraying. All small twigs and branches showing any signs of the disease should be removed. Old cankers on the larger branches should be cut out without fail as they are very serious sources of spore production, and the wounds should be protected in order to keep out wood-rotting fungi and insect pests. The cut edges of the bark and the cambium should be painted with shellac and as soon as this dries the entire wound may be covered with coal tar or any good paint. The prunings and all bark removed from the cankers should be burned.

FAILURE TO SET FRUIT

The question is often asked as to why so many trees blossom fully, then fail to produce any fruit. Among the reasons which may cause this are:

Self-sterility, that is, many fruit trees have blossoms which are not capable of setting fruit properly unless the pollen from another variety is used. For instance, the Bartlett pear does not set fruit so well if planted alone as with other pear trees blooming at about the same time. Another reason is that pistils of the blossoms may be injured by cold. The cold may not be sufficient to destroy the flower, but the delicate pistil is injured so that there is no possibility of the pollen developing the fruit. Weak trees, those weakened by insects or diseased conditions, may bloom heavily and have insufficient vigor to set the crop.

Rain or severe electrical wind is another cause of barrenness if coming at a certain time in the blooming process.

Excessive wood growth which may be caused by an overabundance of nitrogen fertilizers or by very severe winter pruning may cause blossoms to drop, for if the tree is forming an excessive amount of wood at blossoming time it seems to cause the loss of the fruit.

Heavy spraying at blossoming time on some varieties of fruit may prevent the pollen from fertilizing the blossom, and this will cause complete loss.

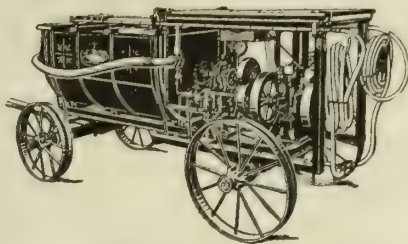
Then of course there are diseased buds, depredations of birds, lack of bees to carry pollen, and other factors to be considered.

CITRUS GROWERS' CONVENTION

Dr. A. J. Cook is making arrangements for a special citrus fruit growers' convention to be held in connection with the National Orange Show in San Bernardino late in February. Definite plans are not yet made, but an effort will be made to secure some of the best qualified speakers on citrus subjects, and cultural and economic questions will have consideration in this convention.

Raw cotton now commands almost twice as high a price as it did at the commencement of the war. This increase is almost entirely due to the prospects of a very light crop for the coming year.

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French, Imperial and Sugar Prune, Bartlett and Other Pears, Apple, Peach, Almond, Cherry, Grafted Walnut, and other trees. Stock pure, clean and first class at bargain prices. Write or wire your wants, and ask for special prices.

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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Contract

B buys five acres of land on contract, paying \$250 down, the balance on time. Now I understand that if B has contract recorded he can stay on property one year, some say 18 months, and that A cannot take any of the crops that B may raise or dispossess him immediately. How long can B remain on land? B also rents piece of land from A, paying A with one-fourth of crop. B does not pay interest or the payments when they fall due, but has contract recorded. Can A take crop on land rented?—Subscriber.

A man holding such contract should always, for his own safety, have it recorded. When such contract is recorded it constitutes a cloud upon the title and it is necessary for the vendor to bring suit to have the contract cancelled in accordance with the provisions thereof, or to enforce its specific performance. There is no particular time limit within which the vendee who does not comply with the

conditions of the contract may remain upon the property, as it is entirely subject to the expedition with which the case may be put through the courts. Usually at the time of judgment being given the court will allow the vendee to make up the full payments, but this matter is within the discretion of the court. As the second parcel of land is a plain rental proposition and is an entirely separate transaction from the contract, the vendee can take no action thereon which is not based entirely upon the rental contract.

Bill of Sale

A party offers to secure me for money due me by giving me a bill of sale to his team and wagon, but wants to retain the same to do his work with. Would they be legally mine if I do not have them in my possession?—Subscriber.

A bill of sale is perfectly valid between the borrower and the lender, but unless the team and wagon are transferred to the lender the contract is voidable as to creditors of the borrower.

Pasturage Not Paid

What must I do to acquire title to a mule which was left for pasture at my place over a year ago? Pasturage was to be paid monthly, but up to date nothing has been paid and the owner has left this part of the country without leaving any instructions whatever.—Subscriber.

The only safe way to finally determine and foreclose the ownership in the mule under the circumstances is to bring a suit in the justice's court

of your township for the amount due for pasture and thus foreclose the lien which you have upon the mule. In view of the fact that you cannot find the owner of the mule you would be entitled to publish summons and acquire jurisdiction in that way. If it was possible for you to find the owner of the mule and give him actual notice of the time and place of sale, or if the owner of the mule had waived his right to such notice in writing, you could proceed to acquire title to the mule by sale at public auction without the necessity of a suit.

Trespassing Cattle.

A has baled hay surrounded by barbed wire corral and outside that a large wire netting corral. B's cattle in his absence ranging on A's unfenced land (without permission) break into A's corrals and eat most of A's hay. Can A for his own protection shoot cattle, not seriously injuring same? Having no means of holding cattle or feeding and watering same in corral pending B's return must A continue to stand for above breaking into his corrals and houses?—Subscriber.

The only recourse which A has is to bring action against the owner of the cattle for damage caused. If he estimates his damage for more than \$300 he may bring a suit in the superior court and have the sheriff take charge of the cattle pending the outcome of the suit and as security for the judgment which he may recover therein. Grounds for the obtaining of a permanent injunction against the owner of the cattle is stated in the question; the violation of the injunction would mean a term in jail for the owner of

the cattle. A has no right to shoot, injure or poison the cattle.

Cattle Poisoned.

A puts out poison on his own land for coyotes which are eating his chickens and turkeys. If B's cattle, ranging without permission on A's unfenced land, are poisoned, what recourse has B?—Subscriber.

If the cattle should eat poison set forth A might be held liable for the value of such cattle.

Community Homestead

In commuting on homestead after 14 months' continuous residence, what amount of cultivation is required? If homesteader relinquishes part of holdings for actual pro rata amount of what filing cost him, can he later take up another similar amount of contiguous land without waiting for final proof? In figuring actual amount as above can he figure attorney's fees for filing and charge of filing or only government fees?—Subscriber.

The provisions of the act permitting a homesteader to take up contiguous land do not apply to anyone who relinquishes his first entry for a valuable consideration in excess of the filing fees paid by him upon original entry. Filing fees mean those actually paid to the government. There has been no change in the law relative to cultivation of land upon commutation.

AVOCADO SCORE CARD

Suggested score card recommended for fairs or contests of avocados by Prof. I. J. Condit.

Size (uniformity), 10; form, 5; stem, 2; skin, 33, divided thus, color, 10; finish, 5; surface, 6; freedom from blemish, 12. Flesh, 40, divided thus, color, 5; thickness and amount, 10; flavor, 5; texture, 5; quality, 10; freedom from fiber, 5. Seed, 10, divided thus, size, 8; condition in cavity, 2.

Size. Avocados may be of any size from small, two or three inches in diameter to large, five inches or more. Medium sizes are most desirable, those weighing from three-quarters of a pound to one and one-half pounds. Sizes should be uniform among the fruits of any one variety submitted for exhibit or judging.

Form. Fruit must have shape typical of the variety. Round and pear-shaped fruits are more desirable than bottle-necked or elongated.

Stem. Stem should show a smooth cut. It should be well set and firm. Deduct one point for each missing stem.

Skin. Color should be attractive, whether green or purplish-black. The skin should have a good finish, glossiness and clearness of color being desirable. The surface need not be perfectly smooth. Warty or exceedingly rough fruits should be discounted. Fruit should be free from blemishes, such as cracks, wind scars, or abrasions.

Flesh. The flesh should be of a good butter color, with very little green near the skin. The largest possible amount of flesh is desirable. The flavor should be rich and nutty, the texture soft and buttery, and the quality as high as possible. The less fiber the better.

Seed. The seed should be small and tight in the cavity.

THROWING OUT BUOYS

On board a ship one day the cry went up: "A man overboard!" and the captain gave orders to a new sailor, who was an Irishman, to throw out two buoys.

The sailor, seeing two boys walking on the deck, threw them overboard. The captain, in a state of excitement, declared that it was cork buoys he wanted thrown overboard.

"Bedad, said Pat, 'how was I to know whether they came from Cork or Tipperary?'"—Chicago News.

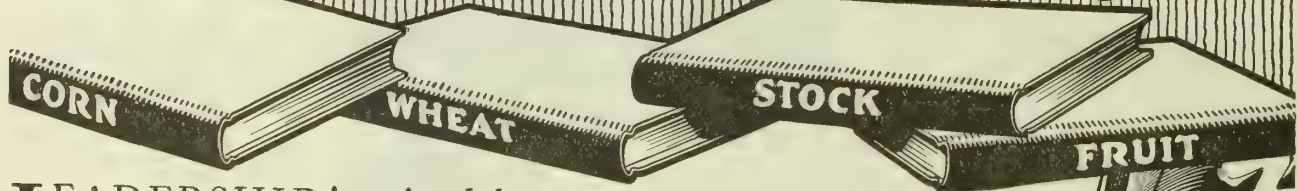
BETWEEN GIRLS

"What are you reading so intently?"

"Balzac. I have to post up on Balzac because my beau is interested in Balzac. Don't you ever post up on the things which interest your beau?"

"I don't have to," answered the other girl. "My beau is interested in me."

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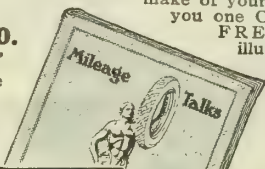
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Firestone Net Prices to Car Owners

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30x3½	11.90	13.35	2.60	2.90
32x3½	13.75	15.40	2.70	3.05
34x4	19.90	22.30	3.90	4.40
34x4½	27.30	30.55	4.80	5.40
36x4½	28.70	32.15	5.00	5.65
37x5	35.55	39.80	5.95	6.70

Firestone

COOPERATIVE FRUIT MARKETING

Continued from Page 483

willing to buy products enough to fill his warehouse, he must consider insurance, storage, interest, risk of decline, etc., at the time of making the purchase; and when the matter is all summed up the man who gets the ready cash has had it heavily discounted. However if the producer makes a good sale the speculator has likely made a poor purchase; and he will certainly make good on some other producer or go out of business; which he seldom does. The result is that someone must suffer for his good fortune, and one more link has been added to the chain of dissatisfaction.

We find any number of individuals and firms who are ready to sell six or eight months before the crop is harvested, even before the trees and vines are in bloom. This is the rankiest kind of gambling. It even puts the blush of shame on stud poker, for in that there is but one card buried, while in future selling the whole hand is out of sight.

One of the most serious results of speculative dealing is the influence on the market. The truth is that specu-

lation has more influence on the market than supply and demand. When these speculative influences are most active, there is, as a rule, no possible way of telling what relation the supply will bear to the demand. I am confident there would be a decided improvement should we establish true cooperative marketing; and I will set forth a few of the many reasons why it should be established. But I refer to genuine cooperation and not half-hearted endeavors, and I refer to practical cooperation and not idealistic theories.

The cooperator who knows his products are going to the markets of the world through his own organization would be much more particular about their preparation. He would take a great interest in the success of his own company, knowing that with good management his well prepared products would receive all possible benefits of market conditions and he would be relieved from the worry of the sale of his own crops. He would know that his products, with those of his fellow cooperators, would be sold over the whole season, and thus obtain the average price. He would also know that he would receive the same returns as his neighbor, quality being considered; and that also would be a great factor for contentment in his community.

Another important feature is the elimination of competition. To illustrate, let us suppose there are a thousand farmers and ten buyers in a community. If each of the buyers should call on each of the farmers but once during a season, there are 10,000 conversations. Each buyer influences to some extent each farmer, and that influence has more or less effect upon the market ideas of most of them. The result is the imposition of the buyers' views upon the community and the dissipation of the original views of the farmers; much to the disadvantage of the latter.

On the other hand, if there is one cooperative organization acting for all the farmers, the buyers have but ten opportunities for expressing their views, and that only to one as equally well posted on market conditions as themselves. There can be no misrepresentation and the inevitable result is a tendency to strengthen market conditions.

Cooperation also eliminates a powerful influence in weakening market prices in this way:

When individual selling is done each seller tries to dispose of his entire crop, thinking that his particular crop will have little, if any, effect on conditions; but at the same time there are hundreds of others doing the same thing, and before it is realized, half to three quarters of the year's crop is sold almost at the same time, and this usually results in a decline. To dispel any doubts concerning this, I might use this illustration: If you want to buy a horse and there are 20 sellers, you know you will be able to buy cheaper than if there are only ten. I think this makes my point clear.

The seller for a cooperative concern goes into the market, naming his price. He is in a position to hold the market steady for he controls the supply. The consumer need have no anxiety for, with true cooperation, there is no danger of prohibitive prices, because, as soon as such a condition existed, consumption would shrink, and the supply, whether visible or not, would exceed demand. Prices would be kept within the reach of the consuming public. This is necessary for the success of the producer, for to succeed he must sell all of his products. However he must of course dispose of them at a price that will reward him for his labors and bring him a reasonable return on his investment. In this connection he has the consumer more at heart than the dealer, even though it be from a selfish motive, for his investment is permanent and he wants his lands to be his life support, while the interests of the dealer are in the goods he may momentarily have for sale, and he gives no thought to anyone but himself. He makes what he can, knowing that the farmer will again fill his house the next year at his (the dealer's) price.

Should the cooperative movement raise the price of fruits, say one cent per pound, as it has done in the raisin association, what a difference it would mean to you. It means the dif-

ference between comparative ease and constant anxiety. And how little such an increase affects the consumer, even allowing the present profits to the distributor, is shown by the fact that on a basis of double the present per capita consumption of two of our leading dried fruit products, the increase would amount to only four cents per year per capita in cost of living.

It is a deplorable fact that under the present system of individual selling quite a considerable percentage of the farmers give only the minimum of attention to the preparation of their products for the market. In other words, they put them only in such condition that they will just pass inspection, and that is all. This we believe is due to the fact that they feel no responsibility after the goods leave their hands. The dealer finds he has inferior goods on his hands and he in turn passes them on because he has money invested in them and he must protect himself. The result is we have products of inferior quality on the market, and the inevitable result is decreased consumption; and in the end the sale of the perfectly prepared article is injuriously affected. Cooperative marketing would overcome this as these same farmers would prepare their products with the greatest care, keeping the inferior goods for other uses. The aim of the cooperative company would be to increase the general consumption of food products, thus adding to the general prosperity of the whole community.

One difficulty which the farmer encounters is obtaining exact knowledge of crop conditions. Most farmers spend their time growing their crops and are not in a position to get reliable crop data. The information given in local newspapers is often misleading, though probably not intentionally so. I have seen accounts in local papers just as overencouraging as the local buyers were unduly discouraging. A cooperative concern possesses reliable crop information and can act intelligently. The value of this knowledge cannot be overestimated. I do not want to be understood as stating that no farmers are posted, for the large farmer has enough at stake to justify his spending time and energy in obtaining information, and he does so. I am speaking of the smaller ones. At the same time I believe that cooperative methods are the best for all, both large and small farmers alike. Other vital information as to stocks in warehouses, the active movements or stagnation of markets, etc., would all be in the possession of a cooperative concern.

With regard to advertising, there is no question that the only kind that is of any benefit to the producer is cooperative advertising. The difference between ordinary and cooperative advertising is that the latter strives to increase the consumption of the commodity, whereas the individual advertiser is only concerned with his own particular brand. Both are selfish, I will admit, but the one giving the greatest amount of good to the greatest number is entitled to the first consideration.

If we listen to the enemies of cooperation they will tell us that what ails the present situation is overproduction. At the time of harvest we hear this argument until we dream about it; and how many times in our memories have we seen it disappear as soon as the major part of the crop was out of the farmers' hands. I tell you manipulation has done more to cause overproduction than the soil has. I will admit that sometimes there is such a thing as overproduction. But how much better the situation could be handled by cooperation. At such times only the best would be put on the market, and thus a fair price would be maintained, perhaps as much as would have been received for the whole crop were it all marketed, and we would then have the market ready to receive the next harvest. "What would be done with the surplus?" you ask. This is a gathering of farmers, and you and all fruit growers know that such surplus can be fed to work stock profitably or converted into meat.

In conclusion I may say that perhaps the best argument in favor of cooperation is the unrelenting war waged against it by speculative dealers.

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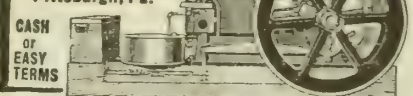
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General Agriculture



SELECT SEED CORN NOW

Written for the California Cultivator
By Sacramento Valley Contributor

THE corn growers of the states of the Middle West have very greatly increased their crops by selecting their seed corn with greatest care.

There is a big crop of corn in California this year and a very much larger acreage will undoubtedly be planted in 1916.

Right now is the time to be selecting the seed, if it has not already been done.

The heads or ears should be selected in the field so that not only the size and weight and general characteristics of the head or ear itself may be noted but that it may be selected from a vigorous, strong-growing, prolific plant.

The seed corn gatherer should have in mind an ideal type of the variety he is selecting. First of all it must be a big producer, then size and plumpness of kernel, and the arrangement of the kernels on the cob or in the head should have attention. When a particular type is selected all of the seed should conform as closely as possible to it.

As soon as the seed is gathered it should be stored in some place where it can thoroughly dry and remain so until planting time, and it should be so placed that it can be easily tested sometime before next spring.

A good way to store seed grain of the non-saccharine sorghum "corns", as they are called, such as Egyptian corn, Egyptian wheat, milo, feterita, etc., is to tie them in a row on a string and hang them along a wall or under a ceiling. Indian corn can be hung in loops made in two strings, one at each end of the ear. Ten or more ears can be "strung up" in loops in this way, and these can be hung along walls, from rafters or ceilings.

When the corn is to be tested, one or two kernels from each head or ear can be taken and placed on a plate or platter or pan in such a way that they will conform to the location of the ears or heads where they are hanging. The ears or heads represented by the kernels that do not germinate satisfactorily can be taken out and fed. If desired a second trial may be made before the discard is made.

The kernels will germinate readily if placed between moist cloths that are laid between pans or plates, and kept in a warm place.

But the important thing now is to get the seed selected and gathered at once. And if a neighbor has a better field than you have, and has a larger acreage than he is going to pick over for seed, see if you cannot get some of his corn from the field, doing the selecting yourself. If you have to pay him for it, it will be money well spent, but you may be able to trade with him on some fair basis.

The use of carefully selected seed of strong germinating ability is going a long way toward insuring the seed factor of the coming corn crop.

THE ELECTRIC BELL ON THE FARM

By L. S. Foltz of Colorado Agricultural College

IN establishing an electric bell system it is advisable to use a central battery for the supply of all circuits. The economy of this is apparent.

Suppose that four circuits are to be established, a front door, a barn, a granary, and a field. To operate the first requires two dry batteries, the second four, the third six, and fourth, ten. Total batteries required, 22. If a central battery supplies all circuits only ten dry batteries will be required. The saving on 12 batteries is about \$3.00. The first two circuits should have their resistances increased to about that of the field circuit so that the ten batteries will not send too much current through them. This can

be done by the insertion of coils of fine, insulated iron wire.

From the terminals of the battery bring two leads to a single throw, double pole switch with which to control the circuits. One end of each ringing circuit should now be connected to one pole on the side of the switch opposite to the battery connection, and the remaining ends of each ringing circuit should be connected to a bell and the bell to the remaining pole of the switch.

All wire inside the building should be annunciator wire. This may be fastened to the walls with small staples driven in only far enough to lightly pinch the insulation on the wire. The wires should leave the house from a concealed place, and if possible be laid in iron pipe a few inches from under ground to the building desired or to the nearest fence leading in the right direction. The wires should leave the pipe by way of a double elbow turned down to shed moisture. The wires within the pipe may be "twisted pair" which is composed of two insulated wires twisted together. If the pipe line is led out to a fence, bring up the end of the pipe by a post and carry up the wires to the fence wires and solder the joints. Whether the fence posts be iron or wood the staples fastening the two fence wires to which connection has been made should be pulled out and wires wrapped at the staples with a small square of sheet rubber cut from old boots or rubbers, or a bit of oil cloth. In any case before wrapping the wire with the patch, dip the patch in linseed oil or oil paint. This will increase the insulating qualities and preserve the patch. Straddle the patch with a staple and drive it home to grip the patch firmly but not to cut into it. The kind of fence wire to which connection is made does not matter for it may be plain galvanized or barbed or woven or a combination. I have used with entire satisfaction a circuit, one side of which was barbed wire and the other side light chicken netting. The staples were not insulated but the weather was dry.

To get from the fence to the building proceed as from the house to the fence, bringing the circuit underground to the interior of the building. From the entrance point lead a pair of annunciator wires around the interior of the building, going above the windows and doors. To the points to be protected lead a wire from each of these annunciator wires and connect to the contactor devices.

The type of contactor will depend upon what is to be protected. An ordinary window may have the wires concealed in the sash strip up to about a foot above the top of the lower sash. The inside edge of the strip should be cut to receive a small strip of spring brass which normally projects into the sash runway. This tongue is soldered to one of the wires and the other wire is soldered to the head of a brass screw lying under the tongue. When the sash is raised the brass tongue is pressed back onto the screw, completing the circuit and ringing the bell. A sliding door or sash may be protected thus. Secure above the door in a horizontal position two strips of brass sheet. Have these side by side and connected to the wires coming down from the main circuits. Arrange an arm on the door or sash which carries a strip of brass which will bridge across the space between the two horizontal strips when the door is opened. This small strip should make good contact with the two long strips throughout the length of its travel, thus closing the circuit and ringing the bell.

A swinging gate may have on the post at the base of the gate a contactor arranged so that when the gate opens a little way the circuit will be closed. This contactor can be so installed that its presence is not revealed except by careful examination.

Now is the Time to Blast Holes for Spring Tree-Planting

BREAKING up the subsoil with dynamite before planting trees or vines has become a standard operation on progressively managed farms and orchards. You will get the best results by blasting holes now for spring tree-planting. The earth will then have a chance to settle and the compact subsoil will be disintegrated by moisture and air.

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GREEN MANURES ON YUMA PROJECT

The report of experiments conducted during the year on the Yuma Reclamation Project experiment farm, near Yuma, Arizona, shortly to be issued by the United States department of agriculture, devotes special attention to a discussion of the method of raising Durango cotton and also discusses alfalfa and sorghum culture in this region. One section of the report is devoted to Sudan grass, and there is mention of experiments with hemp, flax and broom corn.

The following advice on the use of green manures, taken from this report, should be of interest especially to alfalfa growers:

One of the most important values of alfalfa is its usefulness as a preparatory crop. It is the best green manure crop yet found when all phases of its benefits are considered. However, a stand of alfalfa is often difficult to establish on very light sandy areas or on spots in fields where heavy grading has exposed the sandy subsoil. Apparently the difficulty experienced in establishing alfalfa stands on these soils is not a deficiency of plant food, but a very irregular moisture content of the soil. This condition has been found to be most economically improved by the addition of a summer green manure crop of cowpeas. Cowpeas when planted in a good seed bed have produced on sandy soil approximately four tons of green manure per acre. Alfalfa may then be seeded in the fall and become established for the following season.

FORESTS ON WATERSHED NECESSARY

In 1911 an association of Colorado farmers who irrigated their farms with water from the North Platte River sent an urgent request to the government to restrict timber cutting on the North Platte watershed, so that as far as possible high spring freshets could be prevented and more water made available for irrigation during the summer months when the crops were most in need. They said that they relied upon the national forest, within which the watershed lay, to ensure a steady flow of water for their crops.

The national forests, besides being the American farmer's most valuable source of wood, which is the chief building material for rural purposes, are also his most valuable source of water, both for irrigation and domestic use. In the West they afford him a protected grazing range for his stock; they are the best insurance against flood damage to his fields, his buildings, his bridges, his roads, and the fertility of his soil. The national forests cover the higher portions of the Rocky Mountain ranges, the Cascades, the Pacific Coast ranges and a large part of the forested coast and islands of Alaska; some of the hilly regions in Montana and in the Dakotas, Oklahoma and Arkansas, and limited areas in Minnesota, Michigan, Florida and Porto Rico. In addition land is now being purchased for national forests in the White Mountains of New England and in the southern Appalachians. In regions so widely scattered agricultural and forest conditions necessarily differ to a great degree, bringing about corresponding differences in the effect of the national forests on the agricultural interests of the various localities. Wherever agriculture can be practiced, however, the farmer is directly benefited by the existence of national forests and by their proper management.



Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Shoe Boil

I would like some advice about a shoe boil, as I have not seen the ques-

tion asked or answered in the Cultivator. I have a fine mare that has a large shoe boil on the right leg or shoulder. Have tried ointment but it does not help it. Please let me know what is good for it.—Subscriber, Santa Rosa.

First you must tie the mare in the stall on the side where the shoe boil is so she will have to lie down on the other side, or wrap a pad of something soft around the foot so it will not bruise the sore. The pressure from the shoe is what is causing it. If it is soft in the center cut it open to let the pus out and wash out the pus cavity once a day with soap and warm water. Get the following liniment from your druggist and use it on the swelling. It will reduce it in a short time: Bichloride of mercury, one dram; alcohol, one ounce, and turpentine, one pint. Mix and apply once a day to the swollen parts.

Indigestion

For three weeks my cow has been decreasing in her milk and she will eat scarcely anything except beet pulp of which I give her a large amount twice daily. For two months she has had small festered spots on the udder, really not large enough to be called boils but they act in the same way. She is getting thin and seems to have a cold as her nose runs and she coughs at times. Tried giving her a handful of salts in the feed but she will not eat it. Please advise what to do.—Subscriber, Lancaster.

The cow should not be given too much beet pulp. Any cow will get sick on all fine feed. Ground grain, brewer's grains or beet pulp will not form a cud and the cow must have some kind of hay or corn fodder to form a cud. Give her a physic of aloin, one ounce; turpentine, two ounces, and raw linseed oil, one quart. Mix and give at one dose as a drench. It might be well to repeat this in a day or two. Then feed on rough feed until you notice her chewing her cud, after which begin feeding her small quantities of grain or beet pulp. The ulcers on the udder are probably cow pox and have nothing to do with the other trouble. Cow pox has been described several times in this column as you will find by referring to back numbers. The cow pox will probably disappear after the above treatment if you are careful to keep the udder clean and not break the blisters when milking or if you do then wash the parts clean and apply some good ointment.

Pin Worms

I have a mare that seems to grow thin although on good feed. I notice that she passes a few worms that are about an inch and a half long, white and tapering in shape. What can I give her to get rid of the worms and get her in better shape? Also have a six months old colt in the same condition.—Subscriber, Paso Robles.

Get the following medicine of your druggist: Aloin, one ounce; turpentine, eight ounces, and raw linseed oil, two quarts. Mix and shake well. Divide into eight doses and give one dose every day. Give the colt half or one-third the amount. If it physics either one of them do not give it so often. Follow this with a mixture of salt and wood ashes; one pound of the ashes to four or five pounds of salt. Give a large tablespoon of this in the feed once a day. If the worms continue after this treatment then make an infusion of tobacco by using a paper of scrap tobacco to each gallon of hot water. When cooled down to body temperature inject about two gallons into the rectum. Repeat this every day for a few days. After riding them of the worms they will probably take on more flesh without any farther treatment. Do not over-feed.

Hog Cholera

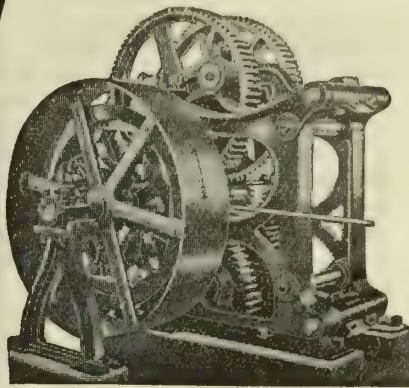
Pigs four weeks old have a cough and have sores or scabs on the head and neck which seem to be a kind of mange. After a few days are unable to eat. What is cause of this disease and the treatment for same?—Subscriber, Calxico.

Probably it is cholera. Your local veterinarian should be able to help you with it.

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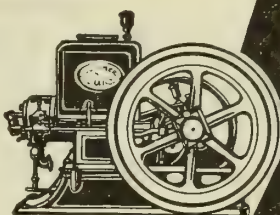
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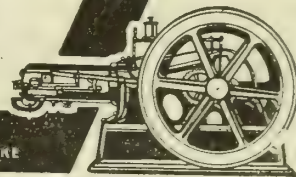
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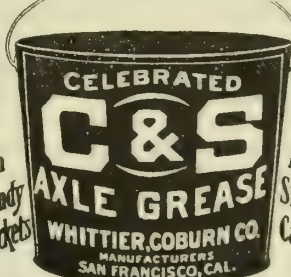
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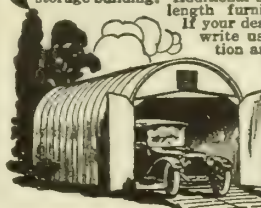


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The California CultivatorRural Californian Combined with the
California CultivatorA Journal of Horticulture and
Agriculture

By

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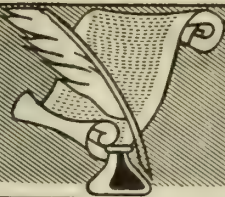
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geles, California, as Second-Class Matter.**Thursday Nov. 18, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**WALNUTS UP**Owing to the output being
somewhat lighter than earlier esti-
mates and to the impossibility of the
French nuts reaching the market
early in the season, the demand has
practically cleaned up the supply.
However, for the crop yet in the
hands of the association an advanced
price has been made on two grades.
Number Ones have been advanced
from 13.6 to 14 cents, while budded
have been advanced from 17 to 17.5
cents.**CONVENTION WEEK**As we go to press the fruit
growers of California are gathering at
Visalia for their 47th state convention.
Also at Corvallis, Oregon, the State
Horticultural Society is meeting. Our
own state convention is to discuss
especially the question of marketing
fruits. Harris Weinstock, the market-
ing commissioner, is to be present,
and it is to be presumed that sugges-
tions will be made and possible action
taken which will lead to more profit-
able handling of our fruits. There
will be an especially strong effort
made to get cured fruit men into line
for a much stronger organization than
now exists.**BEAUTY PROPAGANDA**We have from Prof. E. J.
Wickson statement that he has asso-
ciated with himself a few earnest
Californians who desire to do some-
thing for the promotion of ornamental
horticulture in California. This is an
informal association of beauty lovers.
One of the features of its work is sup-
plying to various newspapers of the
state suggestions as to better and
more flowers, shrubs and shade trees.We wish it were possible for this
propaganda to take every one of itspupils—and we hope this means
every Californian—for a direct object
lesson to the grounds of the Panama-
California Exposition at San Diego.
California offers no more beautiful
landscaping than is shown there.**RECORD FOR BUTTERFAT**It seemed years ago that the live
stock breeder has reached his limit in
producing the greatest amount of
meat for the least feed and the great-
est amount of butterfat for the least
feed, yet month by month the record
is raised until now the record break-
ing dairy cow is producing more than
her own weight in butterfat annually.
Now comes the last world's record
breaker in a Holstein Friesian cow,
Duchess Skylark Ormsby, with a 365
consecutive days' record of 27,761.7
pounds of milk containing 1205.09
pounds fat. Of course this does not
equal the production of one of our
own California cows as to milk, but it
does surpass it in butterfat.

At the same time comes from the

introduced from Algeria and other
North African points where they
have been secured by the department
of agriculture and special agents sent
by the associations in the Coachella
Valley. The experiments have shown
many failures. They have also shown
that this is an industry entirely dif-
ferent from any other in California.For nine years Mr. Bruce Drum-
monds of the department of agriculture
has been in California making most
careful observations on the govern-
ment experiment station grounds and
on privately owned tracts. One hun-
dred different kinds have been tested
out. Many of these are, of course,
seedlings. In fact, some of the very
choicest of bearing palms are seed-
lings. Those now bearing are largely
chance productions. Now there is
being conducted a series of experi-
ments with seeds resulting from
hybridization, or rather from careful
pollenizing.Mr. Drummond has discovered that
by using pollen from the Phoenix
Canariensis, the ordinary ornamental**AN EXPLANATION**Some of our great family of readers may think \$1.00 a lot of money
to pay for the California Cultivator. As a matter of fact we lose money
on every dollar subscription. A little explanation of this will undoubtedly
interest you, because few ever stop to think of the work we do for that
small amount of money.Fifty-two times a year we send you a well printed and well edited
paper, containing as much of the news of the farming world as possible.Fifty-two times a year that paper is addressed and wrapped up; fifty-
two times a year we have to pay postage on that paper.Fifty-two times a year we must pay for the printing; fifty-two times
a year we must pay for editorial work, which is very expensive.Fifty-two times a year we must pay salaries of the office force that
looks after the publishing end. For all this, you contribute \$1.00.Your next thought is, how can it be done? It is not the subscriptions
that makes it possible to publish such a splendid paper as the California
Cultivator. It is a combination of subscription and advertising patronage.We have your interest in our subscription department, now we want
to get the same loyal support for the advertisers.We wish that every reader would realize that without advertising it
would be impossible to publish this paper at \$1.00 per year, therefore, it
is necessary that you bear these advertisers in mind whenever you can
use their goods. Give them the benefit of your patronage. We guar-
antee it will benefit you and we further guarantee that the more you pat-
ronize advertisers, the more advertising the California Cultivator will be
able to secure, and the more business of this character we carry, the bet-
ter paper we shall be able to give you. Give us this help and coopera-
tion. Look through our paper and see if there is some article advertised
in this very issue which will add to home comfort or increase farm
efficiency.Jersey cattle people the claim of the
world's record for continuous produc-
tion of one animal from the age of two
to the age of nine years. Her first
year's production, that is starting at
the age of two years and two months,
was 7,050.2 pounds of milk with 446
pounds butter. Her greatest year be-
gan at the age of seven years, 11
months when she produced 17,557.8
pounds of milk with 11,076 pounds of
85 per cent butter. The total produc-
tion of this cow, Sophie, was 75,920.8
pounds milk with 5,217 pounds of 85
per cent butter for six continuous
lactations. Hence the Jersey people
are claiming the world's champion
long distance dairy cow.**DATES**While we are producing more
peaches and some other fruits than
the market seems to crave, there are
other products demanded by the mar-
ket which have not attracted suffi-
cient producers. For example, with
almonds, figs, avocados and dates, we
need more to satisfy the market.
Great quantities of dates are now
imported and more would be if they
could be produced and packed under
American conditions. For several
years there have been a series of ex-
periments in Southeastern California
and Southwestern Arizona. These ex-
periments have called for trials of
suckers of the date which have beenpalm of California, with which to fer-
tilize some of the moister dates that
he secures a drier product and one
which ships and keeps much better.
Some unthinking planters have used
seeds from these dates and secured
plants of no value whatever. But by
using pollen from male plants whose
ancestry has been of strong bearing,
desirable quality seed is being pro-
duced from which much is expected.Fortunately the date bears young
and it is not long before fairly accu-
rate information is secured, and of
course about half of the plants are
pollen bearers and of no value except-
ing for the few which are required in
each plantation, and perhaps half of
the bearing plants will be of indiffer-
ent or practically no value. This
makes rather slow production, and yet
with the impossibility of securing the
required number of suckers from
date producing countries, it seems the
wiser way to produce orchards.We would not carry the idea that
date culture is on an assured profit-
able basis, under all conditions, but
for the man who can afford experi-
mental plantings and has land under
right climatic conditions with abun-
dant water there is great promise
in the date industry.The center of the industry at the
present time is the Coachella Valley,
regarding which there is a short
article on the third page of this issue.
Also on the same page there are a
few small engravings showing Cali-
fornia date palms, while on the cover
page is a view of a Coachella Valley
home, the latter used by courtesy of
Mr. Compton of the Coachella Valley
Submarine.**Agricultural Notes**There are Chinese chambers of com-
merce in New York, San Francisco
and Manila.Rains in Ohio have rather seriously
interfered with the sugar beet har-
vest and somewhat reduced the qual-
ity of the beets.Palestine has passed through a ter-
rible devastation by locusts. Probably
the orange and olive orchards have
suffered most, all foliage being de-
voured.China is planning universal educa-
tion. Its 40,000,000 children within
school age will require 400,000 public
schools, according to the minister of
education.An effort is being made to introduce
blight-proof coffee into the Philippines.
The coffee industry of the islands was
destroyed by the blight which swept
the entire East 25 years ago.In Canada 9900 hogs were slaughter-
ed by orders of veterinary inspectors
during 1914. These animals were
either infected with hog cholera or
had been in contact with the disease.
Compensation was paid the owners
to the extent of \$61,588.44. Canada is
certainly making a determined fight to
exterminate hog cholera.The demand for substitutes for ab-
sorbent cotton has been keen since the
beginning of the present war in Eur-
ope. The only substitute that has
found a large sale in Berlin is made
of pure pine cellulose. It can be pro-
duced much cheaper than cotton. It
is claimed that it absorbs blood better
than cotton, but is not so good as a
dressing for wounds.The 1915 orange crop in the Valen-
cia district of Spain is of excellent
quality but limited in quantity. The
fruit is generally sound and compara-
tively free from insect pests, while the
percentage of large sizes is high,
which is in marked contrast to last
season. In the important Alcira dis-
trict there is a noticeable shortage
over last year. Many orchards show
hardly a fifth of the usual production,
a large number about half, while near-
ly normal conditions prevail among
the majority.During the war much attention has
been devoted to potato drying in Ger-
many and with the assistance of the
government 240 new plants have been
established. It is thought that these
plants will find a good market for their
products even after the war on the
ground that the value of dried potatoes
as a foodstuff has now become known,
and that the potato bread will in con-
sequence be eaten not only during the
war, but afterwards as well. The ex-
tensive use of this product for cattle
feeding will, it is expected, also con-
tinue.All federal restrictions on the move-
ment of live stock because of the foot-
and-mouth disease in the states of
Indiana, Michigan and Virginia are re-
moved by an order signed by the sec-
retary of agriculture, effective October
9. With the removal of the quaran-
tine from these states the whole coun-
try with the exception of Northern Il-
linois, is now practically free. Two
areas in Steuben County, New York,
in Hudson County, New Jersey, and
the so-called "neck" in Philadelphia
are still under a modified form of
quarantine, however, and a part of the
West Philadelphia stock yards are in
the restricted area. With these excep-
tions, however, the quarantines which
were imposed as a result of the out-
break in 1914 have now all been re-
moved.

Agricultural News Notes



of the Pacific Coast

Northern California

Placer County has a 75 per cent crop of olives.

Stockmen are jubilant over the coming of the rainy season.

Sacramento County this year grew nearly 20,000 acres of beans.

The celery acreage in the delta of the San Joaquin is increasing.

Concord, Contra Costa County, is promised an incubator factory.

Durham, Butte County, has shipped 31 carloads of almonds so far this season.

A grower of Orland, Glenn County, reports the sale of 8000 sacks of barley at \$1.16½.

Fruit growers of Auburn have formed a cooperative association to market their fruit.

Lake County farmers are somewhat alarmed over the rapid spread of Johnson grass in their county.

More than 50 conventions are booked for the Panama-Pacific Exposition during the month of November.

The olive packing houses of Oroville are now started on their season's run. The olive crop is estimated at normal.

Some of the Butte County peach orchardists are discussing the advisability of grafting over their peach trees to varieties of shipping plums.

The fall wool sale held at Cloverdale the latter part of October brought splendid prices to the sheepmen, averaging 15 cents per pound. One sale was reported at 16½.

The Farmers' Protective Association of Sutter County named L. D. Baun its representative at the Fruit Growers' Convention, which is being held at Visalia this week.

Yields ranging from 70 to 125 bushels per acre of corn are being reported in the Delta region of San Joaquin County this year; most of the corn planted has been of the King Philip flint.

Farm bureau meetings will be held in Alameda County as follows: Monday, November 22, Newark Center at Newark, at 8 p. m.; Wednesday, November 24, Niles Center at Niles, at 8 p. m.

Sacramento Valley ranchers are showing much interest in the proposed fight against the water grass pest in rice fields, which is being suggested by the Sacramento Valley Development Association.

Alameda County has taken largely to early pruning, the majority of the apricot orchards having been already pruned. The question of winter spraying is being discussed at most of the farm bureau meetings.

Preliminary steps have been taken to organize the Napa County chamber of commerce. F. L. Alexander of St. Helena was chosen chairman of the temporary organization and Farm Adviser Baade, secretary.

The poultry show held in connection with the annual Butte County Rice Exposition at Gridley, October 30 to November 3, proved to be very successful and was the center of attraction for a large part of the visitors at the exposition.

Central California

Monterey bean farmers are getting good prices for their beans.

The Cured Fruit Association of Modesto has sent out several carloads of figs.

The orange crop of Kern County is now estimated at about 60 per cent of normal.

The California Associated Raisin Company has declared a dividend of \$408,000.

Prune growers of the Santa Clara Valley are holding together for a six-cent price.

At least 200,000 acres of lake bottom land will be sowed to grain in Tulare County.

Modesto has formed a branch organization of the California Peach Growers' Company.

California's milch cows are valued at nearly \$40,000,000 in the report of the state board of agriculture for 1914.

A cheese factory on River Terrace Farm at Hickman, Stanislaus County, sends out a ton of cheese every week.

Twenty-four hundred acres were planted to rice in Kern County this year. The prospects are for a good yield.

The Peach Growers' Company is still growing. Its plan of organization is patterned after that of the California Associated Raisin Company.

The streets about the raisin packing houses in Selma, Fresno County, are piled high with raisins which cannot be admitted to the crowded sheds.

The combined pack of the Visalia canneries this season is roughly estimated at 275,000 cases. Very heavy early shipments have been made.

The Kern County farm bureau will hold meetings at Shafter November 24 at 8 p. m.; Arvin, November 26 at 8 p. m.; Bakersfield, November 27 at 2 p. m.

More than 500 acres of beans are being harvested near Tulare. Most of the beans are blackeyes, though some experimental plantings have been made of limas.

Pearl of Venadera, the Jersey cow owned by Guy H. Miller of Modesto, was awarded the championship in the Jersey milking class at the Panama-Pacific cattle show.

The almond crop of Oakdale, Stanislaus County, this year is ten times last year's. Its value is estimated at \$100,000. Fifty of the growers have joined the Almond Growers' Exchange and organized a local branch.

The Kern County farm bureau will hold its annual meeting on November 27 in the county high school auditorium at Bakersfield. This will be an all day meeting beginning at 10:30. Election of officers for the coming year will be held.

C. E. Chambliss, in charge of the United States rice experiments, has been inspecting lands in the vicinity of Oakdale, Stanislaus County, and warning growers against too hastily planting rice before they are sure their conditions are favorable.

Southern California

Santa Paula reports practically all walnuts shipped.

A hog raising contest has been started in the Chino schools.

An orange packing house at Ontario was destroyed by fire last week with a loss of \$13,000.

A plan is proposed for the establishment of a cotton mill at Blythe, Riverside County.

The Santa Paula Walnut Growers' Association is receiving about 15 tons of walnuts per day.

Santa Maria, Santa Barbara County, has completed its bean harvest. Five cents is the highest price reported.

Santa Barbara reports many lima beans selling at \$4.50 and \$4.55 f. o. b. Many growers are holding for \$5.00.

At the last monthly meeting of the Ventura County farm bureau directors the organization of a county bean association was discussed.

Bean growers of the Camarillo district of Ventura County will meet on Saturday at 2 p. m. to discuss organization of a bean growers' association.

The lima bean crop in the immediate vicinity of Santa Barbara city is estimated at 85,000 bags; the crop of the Goleta district at 40,000; Carpinteria, 37,000.

There is a congestion of bean and walnut shipments from this state at Galveston, owing to the rerouting made necessary by the slides in the Panama Canal.

Heavy export orders for beans from England and France have caused considerable excitement among growers. Pinks and navies were both considerably advanced last week.

Imperial Valley is arranging for a big marketing convention to be held in Brawley early in December. The program is in charge of Walter E. Packard of the experiment station at El Centro.

The report of the San Diego Cow Testing Association for October shows that the dairy herd of E. M. Walker of Lakeside has the largest number of cows with butter fat production per month more than 50 pounds.

Hundreds of turkeys are being shipped from the Imperial Valley to the Los Angeles market. The Wells Fargo agent in the valley estimates that 30,000 turkeys will be sent from the valley for the Thanksgiving trade.

San Diego County farm bureau will hold local meetings at El Cajon, November 22 and 23; Otay, November 24; Potrero and Campo, November 26. The meetings at El Cajon and Otay will be held at 8 o'clock in the evening.

Nearly 200 citrus fruit growers of the Ontario section gathered at the Chaffee auditorium Saturday, October 30, to listen to a discussion of plant diseases and fruit blemishes, the meeting being conducted under the auspices of the Riverside experiment station. Dr. Fawcett, who is an authority on gum disease, was the principal speaker.

The Coast

The Arizona agricultural experiment station is advocating planting of garbanzo beans.

Cochise County, Arizona, has 33 silos, 21 of which were put in this year. All but nine are pit silos.

Owing to light rainfall in Klamath County, Oregon, this year much of the grain land will be summer fallowed.

Glendale, Arizona, will have a farm bureau meeting November 20; Tempe, November 24; Gilbert, November 26.

A large number of entries have been made for the Arizona Poultry Show to be held at Tucson December 16, 17 and 18.

Members of the Chandler, Arizona, Poultry Association have decided not to hold their show in January as planned.

The second week in October recorded a shipment of 533 carloads of apples from the Wenatchee district of Washington.

Sheep barns at the Phoenix state fair grounds have been remodeled. It is expected there will be a large number of exhibits.

Farmers of the Yuma Valley of Arizona are being urged by shippers to plant more cantaloupes and watermelons next season.

Farmers of Minnidoka County, Idaho, are saving their grain for feed, expecting to make bigger prices from the grain on the hoof.

Farmers at Sunnyside, Washington, received \$11 per ton for canning tomatoes this year. The average yield is estimated at 14 tons per acre.

The Pacific International Live Stock Show will be held at Union Stock Yards, North Portland, Oregon, December 6-11. Entries close November 27.

Farm Adviser James A. Armstrong of Maricopa County, Arizona, announces as the subject of discussion at farm bureau meetings through November "Does Your Farm Pay?"

H. J. Ramsay of the University of Arizona agricultural extension service is in the Salt River Valley discussing with lettuce growers plans for handling and shipping their crop.

Farm bureau meetings in Cochise and Santa Cruz Counties, Arizona, this month will discuss community work, winter crops, fall and winter plowing and live stock. Farm accounts and records will also be discussed and farm surveys made.

A. L. Paschal, farm adviser of Cochise and Santa Cruz Counties, Arizona, announces meetings for the remainder of November: Douglas, November 22, 23 and 24; Cochise and Pearce, November 26; Willcox, November 27; San Simon, November 29 and 30.

Many Arizona farmers are making plans to attend the fourth annual farmers' short course which will be held at the University of Arizona college of agriculture at Tucson the two weeks beginning January 3. Special rates on the railroads will be given to all attendants.

The Alpha Automatic Power Spray Outfit (Patented)

Fitted with 2 in. or 2½ in. Automatic Duplex or Triplex Pump
Equipped with the New Mechanical

Automatic Pressure Governor

The Automatic Pressure Governor Insures Safety, Secures Uniform Pressure and Eliminates Unnecessary Wear. No Relief or Diaphragm Valve Required. Top Guard Rails Fold Up or Can Be Quickly Removed. Gear or Belt Driven. Brass Fitted Throughout.



THE TWO ESSENTIALS in a power sprayer are a thoroughly dependable engine of ample horsepower and a positive and reliable pressure regulator that will insure uniform pressure and eliminate unnecessary wear.

THE AVERAGE SPRAY RIG is equipped with a cheap engine and a make-shift pressure relief valve or diaphragm which is exposed to the corrosive action of the spray material which soon puts it out of commission.

THE ALPHA AUTOMATIC PRESSURE GOVERNOR with which the Alpha Spray Outfit is equipped is a simple arrangement of two levers and a spring on each plunger connecting rod which, when the pressure reaches a predetermined limit, automatically discontinues the operation of the pump without interrupting the driving power, again permitting it to resume operation when the pressure falls below the point at which it has been set.

THIS INSURES SAFETY, secures uniform pressure, and eliminates unnecessary wear (no liquid pumped except it passes through the nozzles), the pressure relief is not dependent on the operation of a sluggish or defective relief valve, but is positive and mechanical, thus making it impossible to run the pressure up to the danger point.

THE POWER PLANT depending on the size rig is either a 2½ H. P. or a 3½ H. P. Alpha Engine equipped with a "built-in", gear-driven, positively timed magneto, requiring no batteries or coil, and is easily started on the magneto without cranking.

CAN YOU AFFORD to own a spray outfit that will balk? When you get ready to spray you have no time to tinker with a defective engine, pump or relief valve, but want an outfit that is capable of a continued high pressure maintenance and one that is thoroughly dependable in every particular.

THE ALPHA AUTOMATIC SPRAY OUTFIT will meet your most exacting demands. The entire frame work is made of channel and angle iron, fitted with a wrought steel bed plate on which the engine and pump are mounted, direct connected with machine-cut steel gears.

BUILT IN ALL SIZES from a 2-inch pump and a 100-gallon tank to a 2½ by 3-inch pump and a 200-gallon tank. (Either duplex or triplex.)

IT WILL PAY YOU to investigate thoroughly the merits of the Alpha Combination Power Sprayer before buying. Send for catalog and prices.

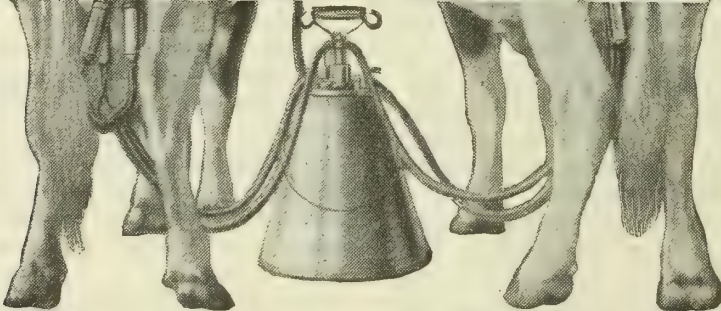
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Everything for the Dairy

EMPIRE MILKERS



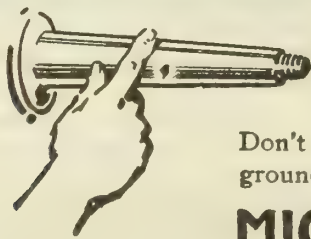
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DRAWS the milk just like a sucking calf—in spurts. Teat rests an instant between each spurt. Cows respond to this natural, gentle, yet firm action, and give down freely.

Capacity of double or two-cow unit is 20 to 30 cows per hour. Natural air pressure is used. Costs little to install—little to operate. Keeps more cows with less expense—less labor. The Empire turns the wages you pay hired milkers into increased profits for you.

Let us send you full description and pictures of Empire Milkers and Empire Cream Separators that are making good in many fine dairies. Ask also for our offer on the Empire Gasoline Engines and Empire Star Feed Mills. Ask for catalog No. 44.

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forms a silvery coating that makes the spindle appear dry and shiny. But this coating is slippery to the touch, for ground mica is a good lubricant in itself. It clings to the spindle and makes easier turning. That's why a little Mica Axle Grease goes a long way. Dealers everywhere.

Standard Oil Company
(California)
Los Angeles

Live Stock and Dairy



SILOS AND SILAGE

Written for California Cultivator
By H. B. Worden



FOR the past two years we have been the recipient of thousands of letters and verbal inquiries from prospective silo users, asking for the elementary facts on silage and the use of silos. The following is a compilation of answers to the questions.

The silage system of today is no longer an experiment. It has been practiced for 30 years, but has come into much more general use within the last ten years. It may be said to be an evolution from a practice which appears to have been well established in Europe as early as 1842.

Trenches were dug in suitable soil about ten feet by ten feet, and as long as required. Corn or other forage crops were harvested while still green and packed whole, salt being distributed liberally during the filling and the mass well packed by tramping. The trenches were then covered with straw, heavily weighted with earth and left until winter. Upon removing the covering a proportion of the contents was always found spoiled, due to introduction of air despite all the precautions then possible to prevent it, but the bulk of the mass was usually well preserved and supplied succulent feed at a time when no other was available.

It is needless here to follow the evolution step by step through the various stages of pit silos, stone silos, square wooden silos, built inside barns, and other shapes, to the now universal cylindrical form fitted with continuous doors, except to note the vast amount of labor expended to reach a result now so easily and economically attained by modern cutters and their attached blowers and the cheap power everywhere available, which make possible the greater height of silos and their consequent greater storage capacity and better preserved silage.

Advantages of Silage

The advantages of the silage system may be briefly summarized as:

The sure preservation of succulent feed and making it available at all times, summer or winter:

The cheapest method of saving forage and the storage of the greatest quantity in the smallest space;

The reduction in the cost of production of milk, beef, mutton, etc., and the greater certainty of results;

The better assimilation of supplementary feeds—some succulent feed is necessary with all rations;

The saving of forage in unseasonable weather and its uniform quality;

Silage can be advantageously fed to all animals;

There is no waste and its use doubles the feeding capacity per acre.

Packing.

The few simple rules are: Harvest the crop at the right time; cut it fine, and pack solid in an airtight silo.

The crop should be hauled, run through the cutter and packed in the silo as soon as possible after it is reaped. Set the machine to cut one-half or three-quarters of an inch. The blower pipe should be set up vertically to prevent clogging. When not provided with a distributing pipe inside, one man with a fork should keep the silage evenly distributed and thrown toward the walls, where one or more men tramp it thoroughly for a foot or two next the walls. Close packing and an air-tight silo are essential to the making of sound silage. The mass must be so firmly packed that practically all the air is driven out of it. In effect, the exclusion of the air is the whole preservative; no salt is necessary, though if desired it may be added at the rate of about five pounds per ton of silage to add to its palatability.

It is not essential that the silo be filled in one day, but the filling should be continued from day to day until

completed. However, if it is desired to partly fill the silo and complete at a later date, any spoiled silage should be removed from the top layer before putting the new silage on top. In a day or two after the silo is filled there will be considerable settling of the contents, sometimes as much as six or eight feet, and to get the full capacity of the silo it is necessary to keep on filling until there is no further settling. Water may be run in on top to expedite settling, and this will also assist in packing the top layer and reduce spoilage. Water may also be added, preferably through the blower pipe to restore succulency. This can be done with any crop and is especially desirable when the crop is very dry when cut. A drain should be provided in the bottom to carry off any free water and this should be a tight pipe, fitted outside with a valve, plug or some means of shutting off the entrance of air, after the surplus water has drained off. This drain pipe should always be open when water is being run into the blowpipe or on the silage and as long thereafter as the liquid runs from the drain in a stream. This is to prevent a hydraulic pressure in the silo, which is bad for the silo and silage both. The excess water is not needed in the silo after it drains down through the silage. As soon as the water or juice runs slowly from the drain pipe or ceases running, shut the valve or plug the drain pipe tight so no air can enter the silo.

When the silo is filled, a fermentation is automatically started which persists for about two weeks and under normal conditions finally raises the temperature to 120 or 125 degrees.

At this point the bacteria which caused the fermentation are destroyed and the temperature slowly subsides. Meanwhile, a layer on top, four or six inches deep, will have moulded and this spoiled layer, like the mould on a jar of jelly, seals up the mass beneath, and it will remain sound as long as the top is undisturbed.

Feeding

When it is desired to feed the silage, first remove the spoiled top layer, being careful to get it all, and return it to the land via the manure pit; then feed a layer off the whole surface every day—one or two inches in winter, and three or four in summer. Any mouldy silage found later, due to imperfect construction, leaky doors, or improper packing, must also be put out of reach. Never feed mouldy silage to any animal. It is harmful to all and especially to horses and young stock.

A chute of some kind is of advantage in handling the silage from the silo to the wagon or other means of getting it to the manger or feed lot. The blower pipe may be utilized by the addition of a hopper at the top.

Be certain your silo is air-tight (except the cover) and that it is kept so. To insure this you must select a silo properly designed from a mechanical standpoint; if of wood made of thoroughly seasoned wood, machined with minute accuracy, and built by experts of experience in silo construction. The first cost of such a silo may be a little greater than that of the ordinary kinds, but in two years or any time thereafter it will be much cheaper and always surer and more satisfactory.

Materials for Ensiling

Corn is more generally used for silage than any other crop. Kaffir corn, milo maize and feterita are very close to it in feed value, being estimated at 90 per cent of corn, and in some sections may produce a greater tonnage per acre. Alfalfa, wheat, oats and barley all make good silage, and clovers and wild grasses may be siloed to advantage, notably in Alaska or other sections where weather conditions preclude their being made into hay. The first cutting of alfalfa is in

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many cases the most profitable crop for the silo in California, on account of the fohxtail, burr clover and other growths which cheapen its value as hay, and of the weather conditions prevailing when it is ready to be cut. It can be siloed without regard to the weather, and the fohxtail, etc., are rendered harmless and make better feed than straight alfalfa. (See University of California Circular No. 24, January, 1915).

Cow peas and soy beans make good silage and, being high in protein, are sometimes siloed with corn to balance the high carbohydrates in the corn. They may be grown and harvested together, or if grown separately may be siloed together by running one load of peas or beans through the cutter to about three loads of corn.

Corn should be cut for silage when the grain is fully formed and glazed, but before it becomes hard—when the ear is in the soft roasting stage. If cut earlier the resulting silage will be more sour and not as high in feed value, and it is not so high in feed value when fully ripe; at this time the bottom leaves will have turned brown and the stalk partly dried, and water should be added to restore succulency. Kaffir corn and similar grains should be handled in much the same way.

The small grains, wheat, barley, etc., should be cut when the grain is in the dough. If left to ripen the stems become hard and carry air into the silo which it is difficult to get rid of.

Alfalfa should be cut when the first blooms appear or a little earlier. It is then at its best in food value; the next crop will not yet have stood out enough to be set back by cutting, and the fohxtail, etc., will not yet have seeded.

Cow peas and soy beans should be cut while the vines are still green—about the same as corn.

Food Value of Silage

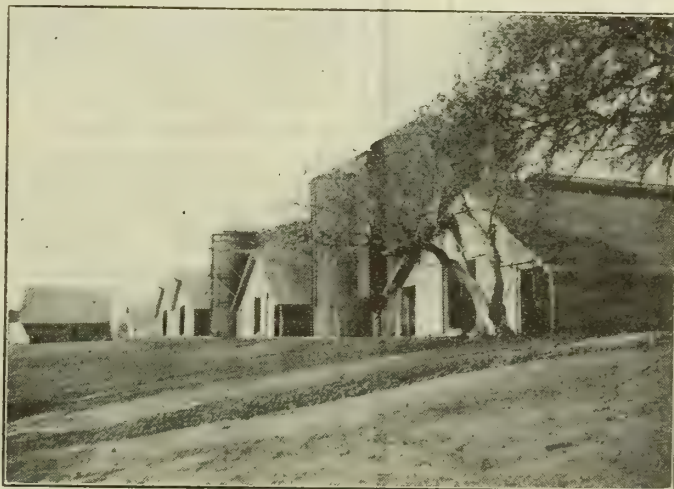
It is difficult to state the actual monetary value of silage in comparison with dry hay. It is generally conceded and undisputed throughout the great silo using districts in the Eastern and Middle West states that

ter is the principal factor in the economy of filling the silo; keep it running to capacity without waste of teams or labor at any point. Silage is a feed for dairy cows, beef cattle, sheep and hogs. A cow in full milk consumes with advantage about 40 pounds per day in two feeds night and morning, preferably after milking. The amount will vary with the breed and even with the individual cow from 25 to 40 pounds, depending on the individual animal. The silage should be supplemented by what dry hay the animal will clean up and a portion of grain, and will keep her in full flow of milk as when on green pasture. A steer will eat from 20 to 30 pounds per day and sheep up to 5 pounds per head and, owing to its beneficial effect upon the digestive tract, the grain ration is better assimilated and the animal takes on fat more readily and makes more weight on a smaller amount of grain than when the roughage is exclusively dry. Feeding silage to sheep not only keeps them in good condition during the winter for spring lambing, but increases the weight of the animal and very markedly increases the length and quality of the wool. Wool growers are now convinced of the great value of silage for sheep.

Silage and hay alone form a good maintenance ration for dry cows, for bulls not in active service, for wintering horses, and for calves as soon as they will eat it. Silage is a good feed for brood sows, keeping them in good health and inducing a good flow of milk at farrowing time. It will also replace green pasture for growing pigs. Many hog raisers are now using silos for exclusive hog feeding.

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Just over the southern border of Sacramento County in San Joaquin County lies the old farm of the Henderson family. Five hundred gently rolling, oak-besprinkled acres which have been in the family since "the days of old, the days of gold, the days of '49," for it was in 1850 that the farm first came into the possession of Mrs. Henderson, the mother of the family. Today an entire family is



THE HENDERSON BARN AND SILOS

75 per cent of the amount of dry hay necessary to feed a certain number of stock at a given time will do the same work when siloed. It is equally well known and undisputed that this silage will increase the beef capacity and the milk production about 15 per cent. These figures are comparative but are the result of years' of tests and actual practice. There is also a great variation in the capacity for assimilation of the different breeds and also even in different individuals of the same breed. Repeated experiments in different sections have established an average feed value of \$6.00 per ton for beef and about \$7.50 per ton for dairy cattle. These figures would vary in different localities and the nature of the crop—but are conservative. The cost of making silage, exclusive of growing the crop will run from 50 cents to \$1.00 per ton, depending upon the length of haul, the weight of the crop and other factors, but principally the skill with which the teams and labor are arranged. For the best results teams enough to keep the cutter working should be used and the crop should be reaped only as fast as it is hauled to the cutter. The cut-

ting is the principal factor in the economy of filling the silo; keep it running to capacity without waste of teams or labor at any point. Silage is a feed for dairy cows, beef cattle, sheep and hogs. A cow in full milk consumes with advantage about 40 pounds per day in two feeds night and morning, preferably after milking. The amount will vary with the breed and even with the individual cow from 25 to 40 pounds, depending on the individual animal. The silage should be supplemented by what dry hay the animal will clean up and a portion of grain, and will keep her in full flow of milk as when on green pasture. A steer will eat from 20 to 30 pounds per day and sheep up to 5 pounds per head and, owing to its beneficial effect upon the digestive tract, the grain ration is better assimilated and the animal takes on fat more readily and makes more weight on a smaller amount of grain than when the roughage is exclusively dry. Feeding silage to sheep not only keeps them in good condition during the winter for spring lambing, but increases the weight of the animal and very markedly increases the length and quality of the wool. Wool growers are now convinced of the great value of silage for sheep.

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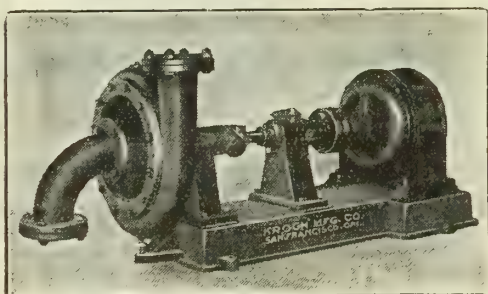
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The manager and family have a house of their own, and a neat bungalow furnishes a home for the men. Here they have bath and shower and most comfortable quarters. This is of great importance and makes for success. This place is and will be a show place for the farmers and dairymen of the state, a help in demonstrating to them the benefits and greater profits to be derived from the use of modern methods and better stock.—C. A. Briggs.

FIELD NOTES

Written for California Cultivator
By C. A. Briggs

For years Mr. C. A. Briggs has been connected with the farm department of the Sacramento Bee. He has now transferred his activities to the California Cultivator and will be looking over the farms in the central part of the state securing information which will be of value to our readers.

At the McGillivray Ranch

In a bend in the Sacramento River a few miles out of the Capital city lies the splendidly developed dairy farm of Mr. and Mrs. James McGillivray. Three hundred and twenty fertile acres, well equipped with a thoroughly modern set of barns, milking sheds and yards provide for a herd of over 100 registered Holsteins; many of them of the very best blood and breeding in the state. In addition to these there are 256 valuable grades of the same breed. The most prominent structure on the place is the massive cement silo which holds 600 tons of corn or 800 tons of alfalfa. All milk and cream is sent to the wholesale market in Sacramento. The calves are fat, healthy looking youngsters, showing that even the skim milk on this farm is good, for they are fed liberally of it, the McGillivrays believing that the first year of a calf's life is a very important one. A score or more of splendid heifers, soon to be in milk, promise to add to the farm's glory and the high records of the older cows. One of them, Inka Tritomia 2nd 71407, won the grand championship award at the California state fair at Sacramento two years in succession, 1913 and 1914. The herd bulls are well cared for and in fine condition. All manure from barns and sheds is flushed with ample water supply into an immense vat, from which it is pumped into cement lined ditches and carried by gravity over every field on the farm.

The feed question is amply provided for by broad fields of alfalfa and fields of corn that would do credit to the Middle Western corn belt of Iowa and Illinois. While the main business is the breeding of registered Holsteins and the marketing of their product, there are several side issues of moment on the farm, notably the 94 acres of beans and other farm crops.

The Grape Wild Farm Guernsey herd and Berkshire swine are being transferred to Mr. Humphrey's Escalon ranch. A number of the herd are now at the exposition at San Francisco.

* * *

Harvesting of 94 acres of beans on the James McGillivray ranch, six miles out of Sacramento, is just finished. Owing to a wet spring and some other troubles the yield is not so large as that of last year. Twenty acres are of the pink variety the balance bayos.

* * *

A. B. Humphrey's Grape Wild Farm at Mayhew out of Sacramento on the Folsom road, is shipping about a car a day of fine Tokays to Eastern markets. Crop has been short but is of good quality. Weather allowing, shipment will continue for about three weeks. General fruit on this farm has shown an average crop. Almonds not as heavy a crop as in 1914.

HOGS FOR HOME BUTCHERING

The farmer is entitled to the best pork that can be produced. It is better not to wait until the animals are fat, but to select a few at once and feed them especially for home butchering. They should have some muscle-building material in addition to the corn, so as to get a proper mixture of lean and fat meat. Oil meal, shorts and tankage are very good to add to corn and wheat may well form part of the feed, especially this year when there is so much field-damaged grain on hand.

Select hogs that combine as many as possible of the good points of bacon and lard breeds so that there will be reasonably good sides as well as hams and shoulders when the carcasses are cut up. Keep the animals selected growing rapidly but do not let them get too fat, in order to get the most desirable hams and bacon cuts, even though this method does not bring as much lard.

Kill more hogs than you need for your own use so that you will have some country-cured meat to sell. Many people will buy it in preference to anything else, especially if you establish a reputation in this line.—P. F. Trowbridge, Missouri College of Agriculture.

PACIFIC INTERNATIONAL LIVE STOCK EXPOSITION

The Pacific International Live Stock Exposition, holding at the Union Stock Yards, North Portland, December 6-11, has been very aptly called the "Court of Last Resort", the place where the breeder and live stock enthusiast will find assembled the stock which has won championship honors at other shows during the fall and winter. The visitors to this show may rest assured that they are looking at the very best of the different breeds in the country. The winning of a grand championship at this show will be an honor highly coveted by breeders.

This is perhaps the only show in the United States given over strictly to the exhibition of live stock, there being no other activities or concessions, "Wild West" or vaudeville features to take the attention of the visitors. Another feature quite unlike all other shows is that of free admission, free stall rent, free entry for live stock, in fact the whole show is an educational exhibit, with the one idea in mind that the people are here for the purpose of seeing and hearing about cattle, hogs and sheep.

Early entries indicate a very strong showing in the fat stock division. It goes without saying that more hogs will be shown than ever before and with a better finish, while the sheep men are determined to make the sheep section thoroughly worth while.

Cash premiums of over \$15,000 will be given.—O. M. Plummer, Gen. Mgr., Union Stock Yards, North Portland, Oregon.

The Stanislaus Cow Testing Association tested 1497 cows during the month of October.

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High Grade Stock of Best Strains
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Poultry for Profit

EGG LAYING CONTEST

ON October 31 the National Egg Laying Contest, which has been conducted at the poultry experiment station of the Missouri agricultural college at Mountain Grove, closed. This is the fourth year of this contest. This contest was in two parts, the Missouri and the National, the Missouri contest being made up of pens from Missouri, other states and foreign countries. Each pen contained five hens and one substitute, which is used in case one hen should die or become incapacitated.

Missouri Contest

In the Missouri contest the ten highest pens for the year are as follows:

Pen 40, Barred Plymouth Rocks, 1050 eggs.

Pen 34, Barred Plymouth Rocks, 1049 eggs.

Pen 6, S. C. White Leghorns, 971 eggs.

Pen 0, S. C. White Leghorns, 957 eggs.

Pen 10, S. C. White Leghorns, 957 eggs.

Pen 38, White Plymouth Rocks, 944 eggs.

Pen 18, S. C. White Leghorns, 931 eggs.

Pen 2, S. C. White Leghorns, 897 eggs.

Pen 26, Buff Wyandottes, 891 eggs.

Pen 14, S. C. White Leghorns, 887 eggs.

Pen 23, Buff Wyandottes, 887 eggs.

National Contest

The ten highest pens for the 12 months in this contest are as follows:

Pen 21, S. C. White Leghorns, England, 939 eggs.

Pen 75, R. I. Whites, Illinois, 845 eggs.

Pen 19, S. C. White Leghorns, England, 844 eggs.

Pen 1, S. C. White Leghorns, Pennsylvania, 830 eggs.

Pen 74, S. C. Reds, Pennsylvania, 824 eggs.

Pen 76, Rhode Island Whites, New Jersey, 795 eggs.

Pen 3, S. C. White Leghorns, Pennsylvania, 789 eggs.

Pen 29, S. C. Black Leghorns, Georgia, 755 eggs.

Pen 8, S. C. White Leghorns, Kentucky, 754 eggs.

Pen 12, S. C. White Leghorns, Texas, 753 eggs.

Pen 70, White Plymouth Rocks, owned by W. B. Jenkins, Glendale, Kentucky, won the cup for October by laying 89 eggs.

The total number of eggs for the month of October was 2572.

The 200-egg hens in this contest are as follows:

Hen 2, Pen 1, S. C. White Leghorn, Pennsylvania, 230 eggs.

Hen 129, Pen 21, S. C. White Leghorn, England, 226 eggs.

Hen 73, Pen 13, S. C. White Leghorn, Pennsylvania, 208 eggs.

Hen 514, Pen 57, White Wyandotte, England, 208 eggs.

Hen 470, Pen 75, Rhode Island White, Illinois, 207 eggs.

Hen 131, Pen 21, S. C. White Leghorn, England, 204 eggs.

Hen 81, Pen 14, S. C. White Leghorn, Kentucky, 202 eggs.

Hen 277, Pen 43, White Orpington, Wisconsin, 200 eggs.

Estimating that eggs average 20 cents per dozen and that it costs \$1 to feed each hen a year, the hen which lays 60 eggs in a year just pays for her feed, and estimating that it costs

one-half as much for housing and labor, the hen which lays 90 eggs per year just pays her keeping. The hen which lays 100 eggs in one year makes a profit of ten eggs, while the hen which lays the sum of 120 eggs in one year makes a profit of 30 eggs, and is therefore three times as profitable as the hen which lays 100 eggs. The hens which lay 200 eggs per year make 110 eggs profit, which would be \$1.83 1-3 profit. Considering this as interest at 8 per cent on an investment, the hen would be worth \$22.91. This estimate is considered from a commercial viewpoint and not from a fancier's or breeder's viewpoint. The only breeder's consideration given is that the hen would reproduce herself so that the investment would be continuous.

Two hundred and forty-nine hens in the four contests laid 200 eggs or over in one year. This is approximately 10 per cent of the hens in the contests, while 253 or 14 per cent of the hens in the contests laid less than 90 eggs in one year. All hens in the four contests averaged 152 eggs each.

RELATION OF SHAPE TO PRODUCTION

Whether the shape of a hen's body influences egg production or egg production influences her shape, or both, we cannot say, yet we do see that good egg producers have triangular shaped bodies in the form of a wedge, the back being one side of the triangle, the breast another, and the third side being the distance from the pelvic bones to the back point of the breast or keel bone.

It matters little whether shape influences egg production or egg production influences shape, for the fact remains that the hens which are producing large numbers of eggs usually conform to this wedge shape, and we believe that something can be told of pullets even before they begin to lay.

Shape assists therefore in selecting the best producers, but where it is possible to trapnest for at least 30 days, much can be told of a hen's value as an egg producer by the rhythm of egg production. The number of eggs produced by a hen without missing a day is called a cycle. The number of eggs in each cycle tells whether the egg organs have the ability to produce eggs rapidly and the frequency with which these cycles are repeated tells whether the hen has a constitution which will stand up under the strain of heavy egg production. In other words, the number of eggs to the cycle tells the hen's breeding and repeating the cycles tells of the constitution.

If a hen lays four or more eggs to the cycle and repeats the cycles with only one or two days missed, she is a good hen. If a hen lays three or less eggs to the cycle and misses two or more days between cycles, she is of little or no value as an egg producer.

The hen which lays 20 or 30 eggs in one cycle, then misses ten or fifteen days, should be classed with the hen which lays regularly but lays only one or two eggs to the cycle. The first has well developed egg organs with a weak constitution while the second has a strong constitution and weak egg organs.

This method of selection is of value where the hens are trapnested for only two or three months during the breeding season or if a hen has been trapnested during the breeding season and should get killed, the rhythm of egg production would give an idea of the value of the offspring.

The Pasadena Poultry, Pigeon and Pet Stock Association and the Southern California Bantam Association unite in their sixth exhibition of poultry and pet stock on December 1-5 on North Raymond Avenue, Pasadena. Secretary M. D. Cartwright of 1713 Morton Avenue, Pasadena, is sending premium list and entry blanks.

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Eggs! Eggs! Eggs!



GILBERT HESS, M. D., D. V. S.

Eggs are high now. Are your hens laying well to make up for the scarce egg crop during moulting? With no green stuff, no worms or insects and no exercise, hens must have a tonic during the winter or they won't lay. I have succeeded in compounding a tonic that will make your poultry healthy, help hens lay and keep the egg organs active.

DR. HESS

Poultry Pan-a-ce-a

A Tonic—Not a Stimulant

Formula printed on every package

I have had Pan-a-ce-a on the market now for 22 years; for nearly a quarter of a century it has stood the test and it has made good in every nook and corner of this country. My Pan-a-ce-a has in it blood builders, tonics, and internal antiseptics, carefully compounded, which, from my lifetime experience as a veterinary surgeon, doctor of medicine and successful poultry raiser, I know will do their work.

During all these years I have never asked a single poultry raiser or farmer to buy my Pan-a-ce-a on claims or say-so, but on a genuine money-back guarantee. Here it is:

So sure am I that Dr. Hess Poultry Pan-a-ce-a will help to keep your poultry healthy and help to make your hens lay, that I have authorized my dealer in your town to supply you with enough for your flock and if it doesn't do as I claim, return the empty package and get your money back.

1½ lbs. 25c; 3 lbs. 50c; 7 lbs. \$1.00; 25-lb. pail \$3.00. Pan-a-ce-a costs only 1c per day for 30 fowl.

My new poultry book tells all about Pan-a-ce-a. It's free.

DR. HESS & CLARK,

Ashland, Ohio.

Dr. Hess Stock Tonic

Your cows, horses and hogs are pretty apt to get out of fix during winter. Dr. Hess Stock Tonic contains tonics that improve the appetite and tone up the digestion, laxatives for regulating the bowels, and vermifuges that will positively expel worms. I guarantee it. 25-lb. pail \$2.25; 100-lb. sack \$7.00; smaller packages as low as 50c.

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens with it, sprinkle it on the roosts, in the cracks, or if kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sifting-top cans, 1 lb. 25c; 3 lbs. 60c. I guarantee it.

Baby Chicks

We will book your order for White Leghorn or Black Minorca Chicks for 1916 delivery. We guarantee safe arrival of a full count of strong, vigorous chicks. Write for prices. When in Petaluma visit our hatchery.

Lasher's Hatchery

3-15 Kent St.

Petaluma, Cal.



Use Globe "A-1" Fish Meal--Why? Because it's the Best--Why?

Because of the following reasons: It is retort cooked, which does not allow any escape of nutrients. It is cooked at a low temperature which does not break down any of the food values. It is sanitary because conveyed directly to factory in steel buckets dumped in retort cooker and bucket sealed out with steam before returning for filling—also because when taken from cooker fish is absolutely dry. No pressing is required, thereby doing away with unsanitary press cloths. It has 10% less oil than any other Fish Meal, which is important, as the oil in fish, if running over 5%, will flavor both eggs and flesh of the fowl. Lastly, the protein in Globe "A-1" Fish Meal is 10% higher than in any other on the market.

All this is brought about by the process we use in preparing this meal. There is no other like it. Send for sample and prices.

Globe Grain & Milling Company

Los Angeles
San Diego

Colton
San Francisco



CONKEY SAYS:

Don't Worry—Lots of eggs are sure if the hens are happy and singing. Conkey's Poultry Tonic keeps them strong and vigorous. Just good medicines. At your Dealer or write Conkey Co., Cleveland, O.



Coulson's Egg Food

Contains sufficient meat, blood and bone to make a concentrated feed very suitable for poultry during the fall and winter months. The other ingredients are carefully selected to give the right balance and variety to the feed.

If you are not feeding it now a change at this time will do your hens good.

Write us for particulars and free book, "Chickens from Shell to Market."

Coulson Co. Petaluma, Cal.



Baby Chicks

All standard varieties of heavy breeds. Very fine S. C. Black Minorcas.

McFarland Strain of White Leghorns. "Quality" our motto. Booking orders for fall delivery. Established 1909.

ARTESIA HATCHERY

Capacity 75,000 eggs.

F. W. Foster, Prop.

When writing advertisers, mention the Cultivator.

Crown Bone Cutter
EASIEST, Fastest, Feed fresh cut bone and get more eggs, higher fertility. Also dry Bone, Grain, Fertilizer and Shell Mills. All Sizes. Hand and Power. Write to-day for Free Illus. Catalog. B WILSON BROS., Dept. 32 Easton, Pa.

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Inserted in These Columns Under a Classified Heading. A Clearing House for Our Many Thousands of Readers.
LINER RATES 12c PER LINE PER ISSUE
No Ad Accepted for Less Than 36c Per Issue. Figure 6 Words to a Line

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USED RANCH MACHINERY USED WINDMILLS—WINDMILLS NEW

8-ft. aeromotor, tower, complete, \$22.50.
10-ft. steel mill, \$18; 10-ft. wood mill,
fine, \$10; 10-ft. steel Star, new, \$25; 12-
ft. steel mills cheapest in town.

USED TANKS—TANKS NEW
Redwood, 1000, 2000, 3000, \$25; 4000,
\$29; 5000, \$33; 25,000, with stand, \$75; 35,
000 with stand, \$190; 50,000 with stand,
\$200. New galvanized tanks, 1000 gal.,
\$19.50; 2000, \$29.50; wagon tanks, irri-
gating pipe.

ENGINES—ENGINES
1-h., \$20; 2-h. Fairbanks, \$35, with
jack, \$39; 6-h., Olds, \$68; 6-h. auto en-
gine, \$25; 11-h. White & Middleton, \$175;
28-h. Lambert, \$275; 34-h. Fairbanks,
\$390.

PUMPS—PUMPS—PUMPS
3 Hor., \$32.50; 5 Hor., \$42.50; two 5 ver-
ticals, complete, \$69; 6 ver., complete,
\$75; 7 Krough ver., complete, \$125; 2 stage
Krough No. 3 pump, \$30; 2 stage 3 B. J.,
the latest, complete, \$110; same thing in
5-inch, \$125, cost \$400; 8 hor., \$90; two-
stage Hor. 5 B. J., cost \$390, for \$125;
6-in. Rotary, \$50; 5x6 Duplex, \$45; Myers
Duplex, \$30.

**BRASS CYLINDERS—PIPE FITTINGS
USED RANCH MACHINERY**
Mowers, \$35; mouldboard, disc riding
plows, \$17 to \$29; hay rakes, \$15 to \$18,
6 gang disc for tractor, 1/2 price; \$160 Su-
per grain drill, 7/8; Bull tractor, like
new, \$350; crusher and roller, \$19; balers,
headers, scrapers. Anything ranchers
need.

BOILERS, PIPE, FITTINGS, ETC.
We do no fake advertising. Trade us
what you don't want for what you need.
We buy first-class used machinery, if
price is right. No junk or stolen machi-
nery wanted. DEMMITT CO., 120 N.
Main St., Los Angeles. A5191, Bdwy.
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For Sale—Used and new Gas Engines, 2
H. P. up, rebuilt and fitted with modern
equipment. 22 years' experience enables
us to repair and rebuild Gas Engines cor-
rectly. Get prices. Lloyd, 806-808 N. Main
St. Los Angeles. F7020—Broadway 4103.

**For Sale—Used windmills, gas engines,
pumps, pipes, plows, harrows, corn
planters, mowers and rakes. Ranchers'
Exchange, 1630 So. Main St., Los An-
geles.**

**For Sale—Used irrigating pipe, 4-inch, 6-
inch and 8-inch, in good condition.
Ranchers' Exchange, 1630 So. Main St.,
Los Angeles.**

TREES

Tribble Nurseries, Elk Grove, Cal.
Grafted walnuts and grafted paper-
shell pecans. Exclusive propagators of
Tribble Mayette, Kern, Parisienne, Glad-
y and Improved Franquette, 19 other wal-
nut varieties. Fine stock of almonds,
prunes, Bartlett pear on resistant roots
and other fruit trees and plants. New list
ready.

For Sale or Exchange—2500 Placencia
Perfection Walnuts; 4000 olives, San
Bernardino County delivery; Valencia,
lemons, grapefruit, all citrus trees; will
trade citrus stock for clear vacant land,
or equities that carry themselves. O. E.
Van Slyke, 916 Story Bldg., Los Angeles,
Cal. or Azusa, Cal.

Chase Walnut Trees, grafted on black
walnut root. First-class stock. They
will make you money. Write for circu-
lar and price. Also seedling trees grafted
from the original CHASE tree. Mag-
nolia Nursery, Whittier, Cal.

Choice Lot of One-year-old Apple Trees;
first-class stock, 4 to 5 feet; \$5.00 per
100. Full line of nursery stock at equally
low prices. Catalogue and price list on
request. Wirt Nursery, R. F. D. No. 1,
Portland, Oregon.

For Acacias, Avocados, Budded Loquats,
Citrus trees, Evergreens, Feijoas, Palms,
Roses and all kinds of trees, shrubs, vines,
etc. Write for our new catalogue. Rob-
ertson Nurseries, Fullerton, Cal.

Walnut Trees—Eureka and El Monte var-
ieties a specialty; also Franquette and
Placencia. Write for prices and descrip-
tion of stock. Personal inspection invited.
Eureka Walnut Nursery, Montebello, Cal.

Fig Trees. 25,000 two-year-old trees from
2 to 6 ft. high. Seventeen varieties.
Write for price list. C. C. Terbush,
R. F. D. 2, San Gabriel, Cal.

Frost Protection—560 11-gallon Hyslop
Orchard Heaters for sale at great bar-
gain if taken soon. I. Ford, 915 W.
Cypress Ave., Redlands, Cal.

For Sale—Mission Olives, Burbank
Lemons, Seedless Grapefruit. One mile
north of Exeter, Cal. Frank K. Asano,
Box 376, Exeter, Cal.

Nurserymen—Pot grown conifers, palms,
shrubs and ferns for lining out or pot-
ting. Ballou's Nursery, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company,
East Whittier, California. Selected
stock for sale; inspection invited.

Budded Avocados—All varieties. Write
for descriptive catalogue. Newbery
Sherlock, R. F. D. No. 2, Pasadena, Cal.

Unload on me your surplus Avocado
trees. Write how cheap. C. W. Brown,
Frost Proof, Fla.

Prune Trees 12c, Walnuts 30c. Cash
Nursery, Sebastopol, Cal.

WANTED

Wanted to hear from owner of Farm or
Fruit Ranch for sale. O. O. Mattson,
Minneapolis, Minn.

Wanted—To hear direct from owner of
good farm or unimproved land for sale.
C. C. Buckingham, Houston, Texas.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade.
The live stock and poultry industries
are a specialty with us. Two thousand
illustrations to select from. Write for
prices and samples. The Kruckeberg
Press, 237 Franklin St., Los Angeles.

LIVE STOCK

Big Type Poland Chinas—I have an extra
good lot of strictly high class young
boars from three months to one year old
that are fit to head any herd anywhere.
Visitors say they are the best they have
seen. They have the large size, the good
hams and shoulders, the strong arched
backs, great length and depth of body,
plenty of smoothness, mellowness and
quality—in fact, they have two good ends
and a good middle, are good lookers and
money makers. Their dams are either
from Illinois, Iowa or Missouri, or they
are from these states. These boars are
sired by Iowa Wonder, who will weigh over
1000 pounds in show condition. He is a
son of A WONDER, the greatest Poland
China boar living or dead. These young
boars carry the stamp of their sire and
will sire pigs that will please you. Satis-
faction guaranteed in every particular. I
am overstocked. I have boars galore. I
will sell them at extremely low bargain
prices. No females for sale at present.
The book on "THE HOG SUPREME—
THE POLAND CHINA" will be sent to
you free for the asking.

Yours for the BIG TYPE—the kind that
grow faster and larger and have more
pigs. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I.
C. Swine; the big white kind. Ready
for immediate shipment; weaned pigs of
both sexes; pairs and trios; mated not
akin. All these pigs are from big type
stock, of extra heavy bone; weight with
early maturing quality. Immunized
against hog cholera; crated and registered
free. Write for descriptive circular and
price list. C. B. Cunningham, Mills, Sacra-
mento County, California.

For Sale—Duroc Jersey Gilts; the dams
of these gilts were sired by such noted
boars as Nebraska Sensation, Cal. Chief,
Top Notch King. He by Modesto King
and bred to Bakersfield Jack and Fan-
Colonel. He by Defender Perfection. He
by Defender. Defender weighed 1100 lbs.
Sold for \$5000, and has more high priced
stock to his credit than any Duroc boar
in the U. S. John Kincaid, East Bakers-
field, Cal.

Del Dayo Farm (Old Haggin Bottom
Ranch). Registered Berkshires, both
sexes and from weanlings to one year
old. Now ready a few choice gilts safe
in pig and some very choice 10 mos. old
Boars and every sale absolutely guaran-
teed satisfaction. Stephen S. Day, Sacra-
mento, Cal.

Grape Wild Farm Thoroughbreds—Guern-
sey Bulls of A. R. Breeding, BERK-
SHIRE HOGS. Finest herd in the state.
All ages for sale. A. B. Humphrey, pro-
prietor, Mayhews, Sacramento Co., Cali-
fornia.

65 Head Registered Poland China Hogs
for sale; all sizes, both sexes. None bet-
ter anywhere. Large and medium type.
\$20.00 and up. We will please you or re-
fund your money. W. A. Young, Lodi,
Cal.

Blue Ribbon Herd Duroc-Jersey Hogs,
Service Boars and Bred Gilts a special-
ty; also boar and two sows, not related.
Meet me in S. F. 1915, prices. John P.
Daggs, Modesto, California.

Thoroughbred Poland China Boars of
large type for sale. Buy at home and
save express. Prices reasonable. For
further particulars write to Maywood Col-
ony Nursery, Corning, Cal.

Milch Goats—Young Nubian Swiss does,
bred from heavy milking stock. For
prices, etc., write Miss B. Stocker, 587
N. Broad St., San Luis Obispo, Cal.

For Sale—At all times, Jacks and Stal-
ions, driving and saddle horses. Price
and stock guaranteed. Phillips and
Kingsbury, 2318 G Street, Sacramento.

Poland Chinas—Lake-Side Stock Farm.
Weanlings to eight months. Satisfac-
tion or money refunded. Geo. V. Beck-
man, Lodi, Cal.

Berkshires—Pedigreed Boars ready for
service. Bred sows, weanling pigs, both
grade and thoroughbred, finest stock. C.
H. Thompson, Navato, Cal.

Calves Raised Without Milk—Cost less
than half as much as the milk raised
calves. Write for free book to Coulson
Co., Petaluma, Calif.

Registered Thoroughbred Berkshires of
all ages; Cholera immune; large boned.
Ricconi Bros., Mountain View, Cal.

Poland Chinas—Young Stock; either sex.
Write for pedigree. Reasonable prices.
Edwd. A. Hall, Watonsville, Cal.

Glenview Poland China—Stock for sale.
Chas. R. Hanna, R. F. D. No. 3, River-
side, Cal.

For Sale—Cheap, two high grade Angora
bucks. Address Roy Saunders, Brown,
Cal.

W. J. Hanna, Reoaks Ranch, Gilroy—
Large type Poland Chinas; bred gilts.
Service boars.

N. H. Locke Co., Lockeford, Cal.—Choice
young Jersey bulls for sale.

MISCELLANEOUS

"Smith's Pay the Freight"—To reduce
the high cost of living, send for our
Wholesale to Consumer Catalogue. Smith's
Cash Store, 112 Clay St., San Francisco.

Dried Figs—Calimyrna seven cents; black
5 cents per lb. for 25 lbs. or more. Trib-
ble Nurseries, Elk Grove, Cal.

TO EXCHANGE

For Exchange—80 acres at Strathmore
Tulare Co., 65 acres alfalfa, 6-room
house, large barn, pumping plant, 250
inches water, 15 ft. lift; a very fine
ranch, good improvements, no waste
land. \$20,000; live stock, implements, etc.
included in this price. Want orange
grove to \$12,000, either Central or South-
ern California, balance mortgage back.
Logan & Wagner, 230 I. W. Hellman
Bldg., Los Angeles.

BEES

Instruction Books and Prices, Bees, Sup-
plies, Etc., Free. Spencer Apiaries, Ven-
tura, Cal.

POULTRY

Baby Chicks—Not now but in Jan. and
Feb. when stock and weather condi-
tions are right to make them profitable.
Quick growers and good prices for the
broilers and pullets that will lay at five
months. White and Brown Leghorns,
Black Minorcas, for lots of white eggs.
R. I. Reds, Barred Rocks, for meat and
best of winter layers. QUALITY and
PRICES will suit you. Write for circu-
lars. We quote delivered prices, any
quantity. Roofden Poultry Ranch and
Hatchery, Campbell, Cal.

MacFarlane Strain White Leghorn Eggs
\$1.50 per 15, \$2.50 per 30, \$5.00 per 100.
Chicks Dec., Jan., Feb. 12c each, after-
ward 10c. Order now, any quantity.
Cockerels \$2.50. Big plant, lowest prices,
stock better than ever. Catalog free.
Correspondence solicited. Newton Poul-
try Farm, Dept. 3, Los Gatos, Cal.

Baby Chicks—All sturdy youngsters from
good stock. Hatched right and arrive
safely. R. I. Reds, Barred Rocks, Black
Minorcas, White and Brown Leghorns.
Write for circular. Orders taken now
for delivery any time to suit you. Camp-
bell Poultry Ranch, Campbell, Cal.

Brown Leghorn, White Leghorn day-old
chicks that are well-hatched and strong
from healthy, vigorous breeders. SAN
JOSE HATCHERY, 371 Meridian Road,
San Jose, Cal. "Chicks well hatched are
half raised."

Poultry Wanted—We pay the highest
market price for all the local poultry
we can get, no matter how large the
quantity; also fresh ranch eggs. We re-
mit immediately. National Poultry Co.,
607 E. Third St., Los Angeles, Cal.

S. C. Rhode Island Reds, Lester Tomp-
kins and Winslow strains eggs for
hatching. Day old chicks. Prices
on application. Rainescourt Poultry
Ranch, Zelzah, Calif.

S. C. W. Leghorn Cockerels, pairs and
trios; also booking orders for DAY OLD
CHICKS; all from the highest utility
fowl. Jos. E. Blackshaw, San Jacinto,
Cal.

First Class Chix—White, Brown Leghorns,
R. I. Reds, B. P. Rocks, Buff Orping-
tons for September and later. Stock guar-
anteed. Hawkeye Hatchery, Turlock, Cal.

Wanted—Active young woman to buy in-
terest in poultry plant and assist in
management. Address, Box 143, R. D.
No. 2, Long Beach, Cal.

Day-old Chicks—Barred Rocks, R. I. Reds,
Lt. Brahmans, Buff and White Orping-
tons, also breeding cockerels. Enoch
Crews, Santa Cruz, Cal.

For Sale—Choice Golden Buff Leghorn
pullets and yearling hens. Best blooded
stock. Sandridge Hatchery, Kerman, Cal.

SEEDS AND PLANTS

Poultry, Hogs and Cattle Fodder Cost
reduced one half by planting and feed-
ing our (Sworn Pedigree) Luther Bur-
bank Cactus Plants. \$50 per 1000; \$10 per
100. Free instructive cactus literature
with feeding results. El Campo Co., 227
Story Bldg., Los Angeles.

Strawberry Plants of the following var-
ieties: Gold Dollar (extra early, fine,
our leader.) New Oregon, "Morse" and
the famous Ettersburgs No. 80, and No.
112, price 75c (postpaid) per 100, \$3.50
per 1000. Foreman Bros., Corning, Cal.

Alfalfa Seed—New crop. You want the
best. We grow it. We sell it. You
buy it. Write or wire for quotations,
samples and information. V. A. PETER-
SON ALFALFA SEED COMPANY,
ARBuckle, Cal.

Burbank Spineless Cactus—Hardest var-
eties, "Melrose" and "Special." Strong,
matured slabs, \$8.50 per 100; \$50 per
1,000. Labranza Ranch, Athlone, Merced
Co., Cal.

For Sale—First class re-cleaned alfalfa
seed that has been inspected in the field
by the Horticultural Commissioner, and is
free from noxious weeds. Also choice
Peruvian seed. O. C. Nordahl, Bard, Cal.

30c Per Pound for 1915 Sudan grass seed
grown in Santa Clara Co. without irri-
gation. Address A. S. Tibbey, R. D. 31,
Morgan Hill, Cal.

Rhubarb Plants—We have some choice
plants to offer in large or small lots.
Get our prices. Currier Bulb Co., Sea-
bright, Cal.

Tree Seeds—All kinds of tree, shrub and
palm seeds. Send for wholesale prices
to nurseries and planters. George H.
Hopkins, Eagle Rock, Cal.

Strawberry Plants, 85 varieties, includ-
ing the Fall-Bearers. Catalog free.
L. G. Tingle, Box 144, Pittsville, Md.

Peruvian Alfalfa Seed—Hair varieties,
also Algerian wheat. S. P. Huss, Yuma,
Arizona.

FARM LANDS FOR SALE

Carlsbad Irrigated Farm Land—Bordering
ocean; on state paved highway and
Santa Fe Ry.; 80 miles south of Los An-
geles; government records show Carls-
bad warmest in winter, coolest in summer
of any spot in Cal.; deep sandy loam,
model water system; low rates; lemons
mature in summer when price is highest;
immense profits in fruits and berries
adaptable to coast territory; winter vege-
tables without competition; minimum
temperature 1914 was 41 degrees; toma-
toes, chili, peas, beans, eggplant, rhubarb,
etc., bring \$150 to \$400 per acre; easy
purchase terms. South Coast Land Co.,
G. Buxton, Sales Agt., Carlsbad, Cal.

FARMERS WANTED

VICTORIA, AUSTRALIA, offers special
inducements. Government land, water,
railways, free schools, 3 1/2 years to pay
for farms adapted to alfalfa, corn, sugar
beets, fruit, etc. Climate like California.
Ample markets. Reduced passages for
approved settlers. Free particulars from
F. T. A. Fricke, Government Representa-
tive from Victoria, 687 Market St., San
Francisco, Cal., Box X.

FARM LANDS FOR SALE

What Do You Want? STATE, SCHOOL,
INDIAN, GOVERNMENT land? What
ever it is we have it! Lists of STATE
land, any 3 counties, \$5. County sectional
maps showing vacant GOVERNMENT
land, plainly marked, \$2.50 any county.
State map showing 600,000 acres of
SCHOOL land, \$2.50. Order TODAY,
Joseph Clark, Sacramento.

For Sale—Three acres almost adjoining
Los Gatos. Nearly new house, six
rooms, bath. Chicken houses and runs
for 2000 chickens. \$5000.00. About \$1500.00
cash, balance terms. Address Lock Box
66, Alpaugh, California.

RABBITS

Richey's New Zealand Red Rabbits won
again at Riverside Fair, 3 medals and
3 ribbons. Pedigreed and utility stock
for sale. MRS. C. A. RICHEY, R. 3,
BOX 557, LOS ANGELES. Send 25c for
booklet "Making a Living on an Acre"
and Care of Rabbits.

Caldwell's Royal Red New Zealand
scored and sold on merit. Catalog free.
Caldwell Bros., Box 613R, Los Angeles.



IRON WAGON WHEELS

We supply any height wheel
to fit any kind of an axle. Guar-
anteed to fit or money back.
Put a set on that old gear. Write
today for list and measurement blank.
ARNOTT & COMPANY, Inc.
112-18 So. Los Angeles St., Los Angeles

FINE EXHIBIT

A series of interesting stories, with the
West as a setting, has been appear-
ing in the last few issues of Collier's
Weekly. Emily Post, under the title of
"By Motor to the Fair—a Trip from New
York to San Francisco", enumerates her
thrilling experiences and describes in a
most apt manner the wonderful, awe in-
spiring scenic effects of the West.

In speaking of the exposition exhibits,
it should be most gratifying to know that
among all the displays the exhibit of a
California concern should be considered
one of the two most interesting and at-
tractive on the grounds. This is indeed
a very high and praiseworthy compli-
ment, the original remarks themselves
bearing repetition:

"Everybody has read about the Ford
cars that run on a conveyor, beginning
at one end as pieces of metal and run-
ning off at the other under their own
power. That is undoubtedly the most in-
teresting exhibit to the public in general.
But to a woman the Sperry flour exhibit
is quite as ingenious and, if anything,
more interesting. They have a whole
row of little booth kitchens to show how
all the nations of the world use flour.

"A camper tosses flapjacks over a camp
fire, a colored mammy bakes Johnny cake
and corn pone, a Mexican makes enchil-
adas and tamales, a Swede, a Russian, a
Chinaman, a Hindoo, and four or five
others each make their national wafers
and cakes (and give samples!). In the
center at a big oven, is baked homemade
American bread and cake and pie of such
deliciousness that everyone who passes
by looks as longingly as the proverbial
ragamuffin at a baker's window".

HOW TO DESTROY MORNING GLORY

The writer has had considerable experi-
ence in killing morning glory with a liquid
called Nonpareil which is mostly com-
posed of carbon bisulphide. The growing
season of the weed is the time to destroy
it with Nonpareil. Successful treatment
has been made in many parts of the
state and amongst others, many acres at
Irvington, owned by Driscoll Brothers,
have been cleaned up, which contained
many patches of the weed, varying in
size from a few plants to places several
feet square, with an ordinary one-gallon
kerosene can or squirt can.

Each man is supplied with a short-
handled hoe and a can. He digs a hole three
or four inches deep around the root with
the hoe. The plant is then cut off with
a sufficient amount of the solution
poured upon the root to entirely cover the
exposed part, after which the dirt is
pushed back over it and packed down.
The advantage of this treatment is that
you can plant a crop in about twenty
days after the application. Treatment
should be made during the summer
months when the soil is dry and warm
and when the weeds are in their growing
stage. Remember there are a great many
roots on their way to the surface at the
time the first treatment is made and it
is therefore necessary to go back over the
land after a short period in order to com-
plete the eradication. Nonpareil can be
purchased from Wheeler, Reynolds &
Stauffer, San Francisco, or from whole-
sale druggists and dealers throughout the
state.

WINS THE GOLD

The Majestic Manufacturing Company
is justified in showing great satisfaction
in the gold medal won by Majestic ranges
at the Panama-Pacific International Ex-
position. Majestic ranges have won
friends all over America for many years
and it is a gratification to those who have
endeavored to produce a fine article to
have in addition to popular approval the
approval of careful judges who place
these gold medals.

By the way, this is not the first win-
ning which these ranges have secured for
similar honors were bestowed at St.
Louis, Portland, Seattle, Jamestown,
Knoxville and Omaha expositions. This
is a wonderful showing.

It is stated that the Egyptian Coun-
cil of Ministers has decided to remove
the prohibition by which cultivators
are not allowed to devote more than
one-third of their property to cotton
cultivation.

Questions

THE EDITOR

and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Hard Milker

Can you give us any information as to what to do for a cow that holds up her milk? While the calf was with her she gave plenty. Calf is now two months old and cow gives only about half as much milk. Know the milk is there because bag cakes every few days.—Subscriber, Glendora.

Cows have been milked by hand for so many generations that it has come to be looked on as the perfectly natural thing for them to give their milk readily to some milker rather than to the calves—while the perfectly natural thing for the animal to do is to guard the life giving fluid for the calf and refuse to be done out of it artificially. Occasionally a cow has this instinct to a degree that causes the milker much worry, and it is exaggerated when the calf is allowed to suck the cow for a considerable time as in this case. It is best to feed the calf from such a cow by hand from the start. Now the best thing to do is to be very patient and massage and manipulate the udder until the cow finally does give down her milk. When it is caked it is well to use some salve or mutton tallow and knead it in thoroughly.—W. S. G.

Best Walnuts

I have some land north of Chino, San Bernardino County, which I think well adapted to walnuts. Would like to know which is the best variety. When should they be set? In selecting trees should I take six or eight to ten foot trees? Would it be advisable to fertilize at time of planting? The trees are to be set in lands which have been growing alfalfa for several years.—Subscriber, Chino.

Walnut trees can be planted at any time after they have become dormant in the nursery rows but should be planted before the roots begin to form new growth in the spring, which is usually about March 1. If the trees are planted early in the winter and copious rains come it may not be necessary to irrigate until April, but it is always safest to follow the planting with at least enough water to thoroughly settle the soil around the roots. Sturdy trees of six to eight feet growth and with a good root system are better than taller trees with scanty roots. Do not put any kind of fertilizer in the holes nor near the roots when planting. A light covering of stable manure on top of the soil will be beneficial, but do not use commercial fertilizers the first year. There is nothing better for young trees than soil in which alfalfa has grown for several years.—J. B. N.

Feeding Parrot

Would some of your subscribers kindly tell me the proper food to give a parrot? Is hempseed its natural food?—Subscriber, Pacific Beach.

The lady to whom I submitted this question has kept a parrot seven years, and a very healthy, spirited bird it is. This lady says she buys nothing for her bird but sunflower seed with which she fills the cup in the cage once a day. For the rest the parrot eats what the family do, a cup of coffee in the morning, with milk and sugar, pancakes, bread, potato, crackers, etc. Green food is given in limited quantities, because there is

some danger of loosening the bowels if too much is given, and parsley is never fed. Canary seed is used by some people, but is not necessary.—J. A. K.

Shipping Cows

After the quarantine is raised would it be practical to ship 100 grade cows from an Eastern state to the Pacific Coast, about 75 milking and 25 springers? Could I arrange to give them proper care on road?—Subscriber, San Jose.

Shipping cows in milk and about to calve, to the Pacific Coast from the states of the Middle West is perfectly feasible. Hundreds have traveled the road and are now satisfactory producers in California herds. They can be given proper care if they are shipped when the weather in the East and through the mountains is not too severe; summer months are best. If they are shipped in ordinary stock cars or box cars they will have to be unloaded, fed and watered every 28 to 36 hours in accordance with the interstate commission rulings, but dairy cows need to be fed, watered and milked in the cars in addition to this. This must be kept in mind in loading the cars.

Dairy cows cannot be moved—even from one farm to another without having some effect on their flow of milk, and ordinarily when cows are shipped half way across the continent they do not come back to their normal flow of milk until after they calve again. There is possibility of accident to "springers" in moving them any distance, but the percentage of loss has not been great.

It is suggested that good dairy cows bring high prices in the dairy districts of the Middle West, and it might be well to make careful inquiry in the dairy districts in California as to securing suitable stock before deciding to bring them from the East.

The writer brought out two carloads of Holsteins from Wisconsin several years ago. They were fed, watered, milked, groomed and otherwise cared for as well as they would have been in a barn. After they had been on the train 12 hours they paid little or no attention to the motion of the train and to stops. At every division point it was necessary to have a long argument with some railroad official to keep from unloading for feed and water, as was required by law, but it was possible in every case to show them that the cattle were better off in the cars. The trip required 11 days, and the cattle were in splendid condition when they arrived.—W. S. G.

Breeding Turkeys

At what age does a turkey tom become too old for breeding purposes?—Subscriber, Moorpark.

A good, vigorous tom may be bred for five years, beginning when he is ten or 12 months old, but should not be used in the same flock more than two years unless he is mated to hens that are entirely unrelated. That is to say he should not be mated to his daughters more than once and many breeders consider once too often.—J. A. K.

Grafting Walnuts on Almonds

Is it possible to graft walnuts on almonds?—Subscriber, Campbell.

There have been so many freak or impossible things done in horticulture that we will not say as to the possibility of such a practice, but the almond is of the peach family, while

the walnut belongs to an entirely different family of trees. The cultivated California, or sometimes called English, walnuts find a most satisfactory host in the ordinary California black.

Dodder

Some time ago inquiry was made of this department as to poisonous growths of dodder. This was later referred to Prof. J. W. Gilmore of the University of California and he answers:

"We have had no evidence or even strong indication that dodder is ever responsible for the death of live stock pastured on land where this weed is prevalent. I have asked several other members of the faculty if they knew of any evidence which would substantiate the report that you mention, and while they are not willing to say that dodder might not be responsible for deaths, no evidence is at hand upon the subject. It is our belief that where live stock are killed upon pastures infested by dodder that the trouble arises from the eating of some other plant. Also, we have no evidence that dodder in hay is injurious. I have seen considerable quantities of alfalfa hay containing dodder fed without apparent injury. This is not saying, however, that an exclusive diet of dodder might not be injurious."

Diabrotica

A Mountain View subscriber asks as to insects destroying leaves of prune trees earlier in the season. This was referred to Prof. Quayle and he answers:

"The insects which were sent in by a subscriber from Mountain View prove to be the Western striped cucumber beetle, *Diabrotica trivittata*. If these insects are abundant enough on the small trees to warrant the expense they may be successfully controlled by an application of arsenate of lead."

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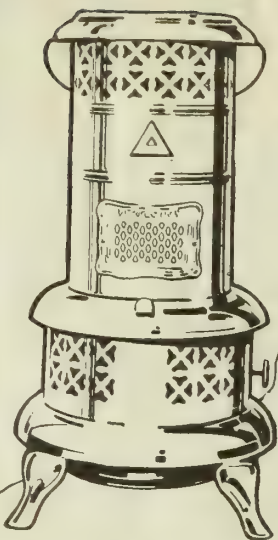
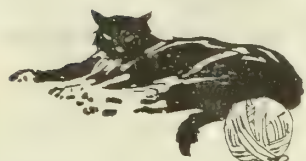
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The Household Department



THANK GOD FOR THE COMMON-PLACE THINGS

The commonplace things of an everyday life,

They crowd us from morn till eve;
For tire as we will and fret as we may,

'Tis by commonplace things that we live.

The grass and the flowers, the birds and the trees,

The river that winds on its way,
The books on the shelf, the prints on the wall,

These furnish our commonplace day.

The tasks that await us on every hand,

That forever insistent call;

The rooms to be tidied, the meals to be cooked—

These are commonplace duties all.
And we turn with a sigh from the dreams that entice,

Of study and travel and leisure—
The wonderful things that make up a life

Where duties conflict not with pleasure.

And yet, were the power of choice our own,

Would we give up the commonplace things,

Or cut a strand of the cord that binds
The duties that every day brings?

Thank God for the anchor that holds us fast,

For the song that contentment sings,

For the lasting power of an everyday life,

Thank God for the commonplace things!—Annette M. Stubbs.

"COME OUT, ALL"

In the parlor all except mother, who is bustling at the fount of those Araby odors, are gathered in a studiously indifferent circle. Of course to such the eating part is nothing. They can wait, enjoying conversation. The reminiscences of the evening before around the lamp and hearth are resumed, fascinating then, but now—huh!

"Do you remember, Lou?" asks father. Uncle Lou does. Ha, ha! Ho, ho! Nevertheless—

Will dinner never be ready?

Aunt and uncle and grandparent draw you to them to fondle and banter and query. But how may one know how old one is, or where was Moses when the light went out, or why a hen crosses the road, when one has resolved into stomach and nose and all one's thoughts are in that adjoining room?

Will dinner never be ready?

Grandmother is telling you in her gentle voice of when she was a little girl and not so old as you and they had Thanksgiving. Interesting should such a recital be. But—

"Oh, dear! Won't dinner ever be ready?"

"Where are you going, Johnny?" demands father sternly.

You want a drink of water—just a drink of water—in the other room.

"No; you stay right in here with us. You'll bother mother."

W-well. But—

Won't dinner ever— Ah! Mother stands upon the threshold. Flushed, warm and triumphant, she bids, "Come out, all."

Since then you have heard by the Dutch ovens of the roundup fire the cook's long yelp of "Chuck!" or on shipboard you have sprung to the galley boy's beckoning wake. You have dropped most willingly into place at the logging camp long table or, tired and spent by a day of strenuous business, in the club's cafe you have sighed with relief as the silent waiter bore in the soup and bread sticks. But mother's smiling "Come out, all," can never be overshadowed.—Edwin L. Sabin in Lippincott's.

ART AND A THANKSGIVING

On November 23 things looked pretty gloomy for Sebastian Caswatter. He had intended to celebrate Thanksgiving day as it should be celebrated, with all the proper accompaniments. But the trouble was that Caswatter did not know just exactly where the money was to come from. With rare providence he had set apart a \$5 bill from the sale of his "Prometheus," but the coal had run out, and more had to be bought.

"Never mind," said Caswatter; "I'll take that 'Autumn Sunset' down to Perdigan tomorrow. I'd made up my mind that I'd keep it if I couldn't get a hundred for it, but if Perdigan wants it for \$50 he can have it."

Mrs. Caswatter almost wept, for she knew how much her artist husband thought of that "Autumn Sunset." He would almost rather have parted with his "Solitude," or his "Gloaming," or his "Achilles In His Tent." It was a masterpiece. "Solitude," "Gloaming," "Achilles" were also masterpieces. There were few things that Caswatter painted that were not masterpieces. The great difficulty with them was that they would not sell.

"But, then," Caswatter would say, "I don't paint to sell. It is my misfortune that I believe in art. I follow my ideals as Michelangelo, Guido and Burne-Jones followed theirs. I suffer from neglect now, but the time will come when I shall be recognized."

On the 24th Caswatter took the "Autumn Sunset" under his arm and offered it to Perdigan. But Perdigan declined to give him the \$50 for it—in fact, he wouldn't have it at any price. Caswatter bore his disappointment with an air of indifference, but he felt it nevertheless, and it was with a rueful face that he met Mrs. Caswatter on his return.

He went upstairs to his attic studio and began to pace the floor in great agitation. He was an artist, but he was also a father, and the thought of little Leonard's disappointment when invited to sit down to pork chops was maddening, and the pork chops seemed inevitable. As he walked and gnawed his beard his eye fell upon "Solitude" and he made a sudden resolve. He would have that Thanksgiving dinner at all costs. He wrapped the picture carefully in the paper that he had just taken off the "Autumn Sunset" and started out.

Perdigan looked at it with his under lip pushed out and said:

"Well, I'd like to make you an offer for it, but—you see, it isn't the sort of thing that sells. I'll tell you, though, if you would like to leave it here I'll do the best I can with it on a commission."

"I suppose you wouldn't care to advance me a little on it?" said Caswatter.

"Why, I'd like to, but you know that's altogether against our rules."

"I'll leave it," said Caswatter.

Caswatter went back to his studio and did some more walking. Usually he dismissed household cares easily from his mind, but this dinner he had counted on so surely. He could see it—actually see it. He laughed savagely and, sitting down before his easel, began to sketch the outlines of a mammoth turkey. Then the idea took him, and he forgot his woes. Gradually the turkey took shape and form, and a celery glass topped with a fringing bouquet of stalks and leaves appeared beside it, then a bowl and a background of pies. He drew up his stool closer and began to spread on color and worked more and more feverishly until the waning light forced him to desist.

Early on the morning of the 25th he arose and attacked his "Barmecide Feast" with undiminished fury. By 11 o'clock it was finished. He took it down into the little dining room, set it up on the mantelpiece and then called Mrs. Caswatter to look at it.

"There's your Thanksgiving dinner," he said. "We'll look at that and imagine it's real."

Mrs. Caswatter was visibly impressed. "What a genius you are!" she said admiringly "That turkey looks as if it had just been taken from the oven. I can smell it, and the cranberry sauce!"

At 12 o'clock Mrs. Caswatter tapped at her husband's door. "My dear," she said, "I hate to disturb you, but Mr. Tublin, the grocer, is down below. He says he's called for the balance of his account. I told him you were busy, but he said he'd like to see you and he'd wait."

Caswatter groaned. "Well, I'll be right down, dear," he said.

When he went downstairs he found Tublin in the dining room standing before the turkey picture, open-mouthed with admiration.

"A fine picture that, sir," he said with feeling.

"About that balance—how much is it?" asked the artist.

"It's only \$5.35," replied the grocer. "I was just passing, and—I never saw a prettier piece of work than that. It'd make a dandy thing for my window."

"You look in next week some time and I'll pay you," said Caswatter.

"Much obliged," said the grocer absently. "Now, that picture—I wonder where I could buy one like it."

"You can have that for a \$10 bill," said Caswatter.

The grocer instantly produced a fat pocketbook and, taking out a bill, laid it on the table and advanced to the picture.

"Here's it's wet yet," said Caswatter.

"So it is," said the grocer. "Well, I must handle it carefully. That's going to help trade this afternoon and this evening. Good day, Mr. Caswatter."

Caswatter looked at the \$10 bill on the table, then he smote his forehead.

"Oh, art!" he cried in anguish.

But an exact replica of the pictured turkey smoked on his table the next day. And if when his last piece of pumpkin pie was consumed Caswatter was not thankful he certainly looked it.—Riverside Press.

THANKSGIVING MENU

Written for California Cultivator

Cranberry Sherbet in Red Apple Cases

Chicken Pie en Casserole

Sweet Potato Croquettes

Stuffed Onions

Creamed Young Turnips

Cucumber Jelly Salad

Hot Buttered Rolls

Sweet Potato Pie Coffee

Fruits Nuts

Onions Stuffed with Ham

Peel eight good sized onions, cover with boiling water and let cook until nearly tender, drain, rinse in cold water and drain again. Cut out the center of each onion to leave a thin-walled case. Sprinkle the inside of each with a little salt. Mix together one cup of chopped ham (cooked), one cup of fine, soft bread crumbs, one-fourth a cup of melted butter, half a teaspoon of paprika, one-fourth teaspoon of salt, one tablespoon finely chopped parsley and the onion that was removed, chopped not too fine. Fill centers with this mixture, rounding it up well. Pour a cup of thin cream or rich milk around the onions and let cook in the oven about 25 minutes, basting two or three times with the liquid in the dish. Mix three tablespoons melted butter with three-fourths cup of cracker crumbs and spread over the top of onions. Return the dish to the oven to brown the crumbs. Serve from the baking dish.

Chicken Pie en Casserole

Separate a young chicken into pieces at the joints, wash, wipe, roll in flour and let cook in salt pork fat, first on one side and then on the other, until a golden brown. Place in casserole, add boiling water, and salt and pepper as needed. Cover and let cook until tender. Have ready, for each service two slices of carrot and four or five potato balls cut out with a French cutter. Parboil the vegetables about ten minutes, drain, rinse in cold water, dry on a cloth and let cook in the frying pan where the chicken was cooked until well colored, then add to the casserole. Pour a lit-

tle boiling water into the frying pan and let simmer until the browned juices of the chicken and vegetables are dissolved, then pour this into the casserole. Prepare a rich biscuit crust or round of flaky pastry the size of the top of casserole, to rest on the edge of it. Place in oven and bake about twenty minutes.

Cucumber Jelly Salad

Pare two cucumbers and cut in slices, add a slice of onion, a stalk of celery, half a tablespoon of nasturtium seeds, a slice of green pepper and a scant half teaspoon of sweet herbs, with water to cover. Let simmer until the cucumber is tender, then press through a very fine sieve. Season with salt and pepper. For each pint of liquid take one generous tablespoon of granulated gelatin softened in one-third cup of cold water and dissolved over hot water. Tint delicately with green color paste and turn into individual molds to harden. Turn out each service on a crisp lettuce leaf, garnish with mayonnaise and a sprinkling of paprika.

Sweet Potato Pie

Press sufficient hot, cooked sweet potato through a sieve to make a cup and a half, add, in the order given, three tablespoons butter, one cup and a fourth of sugar, half a teaspoon each of salt, cinnamon and mace, the beaten yolks of three eggs, the whites of three eggs beaten very light, two cups of rich milk and one-fourth cup of double cream. Mix all thoroughly and bake in a large, deep plate lined with pastry until firm in the center. The proportions given are just right for a pie plate of the usual size.

DATE RECIPES

Date Pies

One cup sugar, half cup butter, quarter cup milk, yolks of three eggs, one cup of dates (seeded, ground and cooked), three quarters of cup of English walnuts, one teaspoon vanilla. Make rich pie crust, line gem pans, put two tablespoons of filling in each crust. Bake until crust is light brown. Cover top with meringue of whites of three eggs well beaten and cup of sugar and vanilla.—Mrs. C. N. Ellis, Indio.

Date Pudding

One cup chopped dates, one cup English walnut meats, one cup sugar, two eggs, four tablespoons cracker crumbs, three tablespoons milk, one teaspoon baking powder. Mix all thoroughly. Steam one and one-half hours. Serve with whipped cream or ice cream.

Date Salad

Steam dates over boiling water a very few minutes. Remove seeds and place in each a walnut kernel. Put on ice and chill thoroughly before serving. When ready to serve place dates on very crisp lettuce leaves and pour good salad dressing over all. This combination is delicious.—Mrs. C. B. Lewis, Thermal.

Date Pies or Tarts

One cup of sugar, half cup of butter, third cup of milk, one cup of seeded dates, three-quarters of cup of English walnuts, ground, yolks of three eggs, one teaspoon of vanilla. Grind the dates and cook in a little water until tender and almost dry. Mix sugar and butter well together, add yolks of eggs, milk, dates, walnuts and flavoring. Line gem pans with rich pie crust, place a tablespoon of filling in each gem pan and bake. Cover each pie with meringue, place in oven and brown.

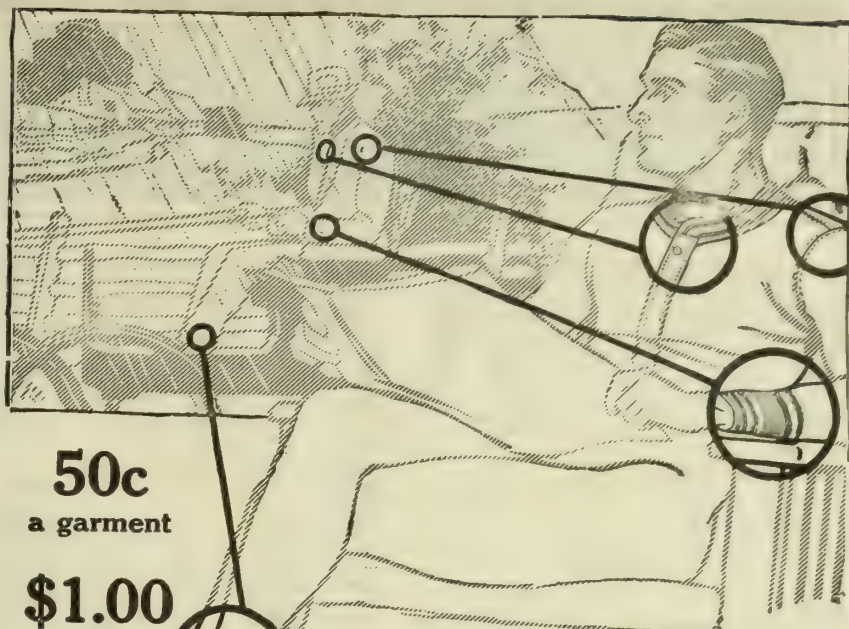
Meringue—Three egg whites well beaten, one cup of pulverized sugar, flavoring to taste.

Date and Nut Loaf

One pound dates (after stoning), one pound walnut meats, one cup flour, one cup sugar, half teaspoon salt, two rounding teaspoons baking powder, four eggs (yolks and whites beaten separately), one teaspoon vanilla.

Mix salt and baking powder with the flour, add to dates and walnuts, add sugar and mix thoroughly again, add egg yolks then fold in the whites and add the vanilla. Pack into a loaf tin lined with buttered paper and bake in a slow oven one hour. This cake

Continued on Page 503



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San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Nov. 17, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras28
Firsts25

CHEESE

Prices to trade, 1 to 2 cents higher:
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Arizona Longhorn17@17½
California Fresh17
Eastern Cheddar20@21
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Eastern Daisy18
Eastern Twins18½
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Longhorn18½@19
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Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts46
Candled48@50
Northern Fresh Extras, f. o. b. S. F.55

Prices to producers:
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Roosters, old3
Broilers, lb.23
Fryers15
Roasters, lb.14
Turkeys17@19
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Geese11
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The following quotations are f. o. b. Los Angeles on all stock:
Hogs, 175 to 200 lbs., per cwt.6.75
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Sheep—
Ewes, head4.50
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Garlic15
Sets—
White, lb.8
Yellow, lb.7

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00@1.25
Beets, doz.35
Beans—
Wax5@5½
Limas5½@6
Green5@5½
Brussels Sprouts, lb.11@12
Cabbage, sack1.25
Northern, lb.1½@1¾
Carrots, doz.30
Cauliflower, doz.65
Celery, doz.75
Chicory, doz.40
Chives, doz.1.00
Corn, lug55@60
Cucumbers, lug1.00@1.10
Egg Plant, lb.3@3½
Escarole, doz.90
Horseradish, lb.12½@15
Leeks, doz.12.00@15.00
Lettuce, doz.25@30
Mint, doz.40
Okra, lb.6@7
Onions, Green, doz.20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone6½@7
Peppers—
Bells5@5½
Chili, lb.5@5½
Pimientos, lb.6
Rhubarb—
Strawberry1.00
Winter Crimson85
Spinach, doz.20
Squash—
Crookneck, box40
Hubbard, lb.1¼@2
Summer, lug40@45
Green Small55@60
Tomatoes, lug70@75
Turnips40

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower1.05@1.25

Jonathans1.50@1.85
King David1.50@1.65
Peaches, Red1.10@1.15
Peaches, White1.10@1.15
Spitzenberg1.35
Yellow Newtown Pippins95@1.00
Bananas, lb.4½
Berries—
Strawberries, basket8@10
Blackberries, basket8@10
Raspberries, basket13@15
Cantaloupes—
Paul Rose, crate1.75
Casabas, crate2.50
Cranberries, bbl.9.25@9.50
Figs—
Black1.10@1.25
White85@90
Grapes—
Black Hamburg, lug75
Malagas, lug1.10
Morocco, lug1.00
Muscats, lug85
Tokay, lug85
Carnichon, lug90
Red Emperor, lug1.35
Guavas, lb.6
Peaches—
Clings, lug1.00
Pears, Bartlett, packed box3.00
Winter Nelis, lug1.00
Persimmons, lb.6@7
Pineapples, lb.6@7
Pomegranates, lug1.00
Quinces, lug50
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons2.00@2.50
Juice Lemons1.25
Grapefruit, Seedless4.50@5.00
New3.50@4.00
Limes, basket1.00
Valencias5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes8@9
Apricots9½@16
Figs—
Loose black, box1.20
Loose white, box1.44
Calimyrna, box, Gold Seal 1's1.50
Peaches5½@7
Pears, lb.11
Prunes, fancy pack5½@15

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	14.00
No. 2	12.00	10.60
Buds	20.00	17.50
Jumbos	18.50	16.60
See almond quotations by Association under San Francisco.		
Feanuts—		
California, Raw	5@6	
Japan	5½@6	
Eastern	6½@7	
Chinese	20@25	
Pecans	18@20	

HONEY

Wholesale selling price:
Comb, Fancy Water White16
Extracted Water White7½@8
White7
Light Amber6
Beeswax25@26

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Limas5.25
Lady Washington6.25
Pinks4.85
Black Eyes4.00
Lentils17.00@20.00
Manchurian Reds4.00@4.25
Small White6.25
Garbanzos5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley14.00@15.00
Wheat Hay12.00@15.00
Tame Oat14.00@18.00
Alfalfa12.50@15.00
Volunteer6.00@8.00
Straw5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.00
Corn, White2.20
Wheat2.05@2.10
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.60
Barley Seed1.60
Barley, Hulled1.95
Kafir1.75
Milo1.60
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal1.25
Bran, Heavy1.50
Alfalfa Molasses, per cwt.1.35

Beef Scraps3.05@3.15
Beet Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.05
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.90
Bone, Green1.85@1.95
Meat Meal3.00@3.10
Charcoal1.90@2.00
Fish Meal3.15@3.25
Rolled Barley1.55
Rolled Oats1.80
Middlings1.80
O. & W. Middlings1.80
Feed Meal2.10
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Grits2.30@2.40
Best Chick Feed2.80@2.90
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Nov. 16, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras30
Prime Firsts28
Firsts26

CHEESE

Wholesaler to retailer:
Young America18
California Flats17
New York Cheddar19
California Cheddar17½
Oregon Twins14½
Oregon Young America, fancy14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:
Price to producer:
Fresh Extras55
Select Pullets44
Hens, lb.13@17
Fryers19@21
Broilers22@25
Roosters—
Young17@19
Old8@10
Squabs2.50@3.50
Turkeys—
Live Young23
Old20@22
Dressed Young24@25
Old20@23
Ducks10@13
Geese, pair2.25@2.75
Belgian Hares—
Live Weight8@9
Dressed11@12

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@9
Hogs4@6½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7½@7¾

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.25@1.50
Delta Burbanks, cwt.80@115
Idaho Rurals1.00@1.10
Idaho Russets1.10@1.25
Oregon1.00@1.25
Sweets1.20@1.30

ONIONS

Wholesale selling price:
Onions, cwt.85@1.00
Garlic10@12½

VEGETABLES

Wholesale selling price:
Artichokes, doz.20@35
Beans—
String, lb.4@7

WEATHER CONDITIONS

For the Week Ending November 13, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

—Rainfall Data— Temperature Data —Past Week—

	Past Week	Seasonal to Date	Normal to Date	Maximum	Minimum
Eureka	1.07	2.28	5.70	56	32
Red Bluff	1.22	1.36	3.49	58	34
Sacramento	.66	.67	2.02	64	38
San Francisco	.68	.74	2.26	62	46
San Jose	.17	.21	1.71	62	32
Fresno	.26	.26	1.26	64	36
Independence	.00	.09	1.16	62	....
San Luis Obispo	.32	.34	2.23	66	36
Los Angeles	.22	1.34	1.23	70	46
San Diego	.40	.72	.81	72	44



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ARNOTT & CO., Inc., 112-18 So. Los Angeles St., Los Angeles



Red Kidney	6.25@6.50
Horse Beans	2.00@3.50

HONEY

Wholesale selling price:	
Comb, Water White, new.....	14@16
Light Amber, new	11@12
Amber, new	7@8
Extracted White	6 1/2@7 1/2
Light Amber	4@5 1/2
Dark Amber	2
Beeswax	25@28

HOPS

1915

Wholesale selling price:	
Sacramento Valley	9@10 1/2
Sonoma-Mendocino	10 1/2@12 1/2
Oregon-Washington	10@12

HAY

We quote the average wholesale prices for hay in carload lots on today's market as follows:

Fancy Wheat Hay (16 bales)	17.00@18.00
No. 1 Wheat or Wheat and	12.00@15.00
No. 2 Wheat or Wheat and	10.00@11.50
Choice Tame Oat	14.00@15.00
Other Tame Oat	10.00@13.50
Wild Oat	8.00@10.50
Alfalfa	10.00@14.00
Stock Hay	6.00@8.00
No. 1 Barley Straw	25@40

GRAIN

Alfalfa Seed	16 1/2
Wheat, Cal. Club	1.67 1/2@1.70
Blue Stem	1.75@1.77 1/2
Barley Feed	1.25@1.30
Shipping and Brewing	1.30@1.35
Corn, Eastern Yellow	1.61 1/2@1.62 1/2
New	1.55@1.62 1/2
Corn, Egyptian White	1.47 1/2@1.50
Oats, Red, Feed	1.25@1.32 1/2
Oats, Red, Seed	1.37 1/2@1.42 1/2

Oats, White, Feed	1.32 1/2@1.35
Oats, Black, Feed	1.50@2.00
Millet	2 1/4@3
Rape	2 1/4@2 1/2
Flaxseed	3@5 1/2
Rye	1.55@1.57 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	16.50@17.50
Bran, ton	25.00@26.00
Feed Cornmeal	38.50@39.00
Cracked Corn	38.50@39.00
Rolls Barley, ton	27.00@28.00
Middlings	31.00@33.00
Shorts	26.00@27.00
Oilcake Meal	37.50@23.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 17, 1915.

By the time this copy of the Cultivator is in the hands of the readers the last Valencias for 1915 will be on the way to the market and probably all will be in the hands of retailers. Although properly belonging to last year's crop these few cars of Valencias—perhaps less than 300—will be credited on the new year, which began November 1, 1915, complete reports of shipments for which were given in last issue.

As to the Navels they are much later than it was anticipated they would be. While there have been a few straggling shipments from Northern and Central California general shipping will not begin before the 29th or 30th of the month. The quality will be high and the growers are insisting on holding fruit till they will stand the eight to one test.

Lemons are going forward nicely and commanding fair prices—better than last year at this time. All freshly cut fruit is sweated and shipped at once. The Austrians have aided—lemon aid as it were—the market by sinking one ship with 11,000 boxes of Italian lemons aboard. Besides that other ships afloat are coming to market with 21,000 boxes. The number afloat last year same date was 54,000 boxes and the preceding year 72,000 boxes. Hence a most hopeful feeling obtains. About 15 cars daily are going forward.

Shipments

Shipments of oranges from Southern California to date since November 1, 1915: Oranges 359 cars, lemons 163, total 522. To same date last season: oranges, 231, lemons 148, total 379. From Central California: oranges 14 cars, lemons 23, total 37. To same date last season: oranges 57, lemons 22, total 79. From Northern California this year, neither oranges nor lemons; last year same date 15 cars oranges.

NEW YORK, Nov. 15.—Sixteen cars Valencias, three cars lemons sold. The market is unchanged on both oranges and lemons. Cloudy.

VALENCIAS—	Avg.
Old Mission, xf., Chapman	\$7.15
Golden Eagle, sd., Chapman	4.75
Lady Rowena, Chapman	3.95
Old Mission, fy., Chapman	5.70
Golden Eagle, Chapman	4.80
Lady Rowena, Chapman	4.05
Cal. Belle, S.T. Ex.	6.00

DATE RECIPES

Continued from Page 501

wrapped in paraffin paper will keep indefinitely and improve with age.

Date Tapioca

One-half cup tapioca, one cup sugar, three oranges, one lemon, one pound dates.

Stir tapioca into three cups of boiling water and cook in a double boiler until clear. Mince dates, add sugar and mix with the pulp of the oranges and the juice and grated rind of the lemon. Put layer of tapioca in well buttered baking dish, then the fruit mixture. Cover with the remainder of tapioca and bake half an hour. Cover with meringue and brown delicately. Serve perfectly cold with cream.

Mocha and Date Cake

One cup of sugar, half cup of strong coffee, half cup of dates, chopped fine, half cup of walnuts, chopped fine, two eggs, one and three-quarter cups of flour, one-third cup of softened butter, one and one-quarter teaspoons baking powder, one teaspoon vanilla.

Beat sugar and egg yolks together eight minutes, add butter then other ingredients, beaten whites last.

Filling—One-third cup butter, one and one-third cups powdered sugar, one teaspoon grated chocolate and vanilla to taste. Add strong hot coffee, drop by drop until right consistency to spread on cake. Beat hard.—Mrs. Bruce Drummond, Indio.

Report of the Condition of THE FIRST NATIONAL BANK Of Los Angeles At the Close of Business, Nov. 10, 1915

RESOURCES

Loans and Discounts	\$15,847,119.28
Bonds, Securities, Etc.	1,478,445.10
U. S. Bonds to Secure Circulation	1,250,000.00
Premium on U. S. Bonds	None
Furniture and Fixtures	175,000.00
Real Estate Owned	14,320.00
Other Assets	588.43
Cash and Sight Exchange	9,017,233.10

Total\$27,782,706.46

LIABILITIES

Capital Stock	\$ 1,500,000.00
Surplus and Undivided Profits	2,547,127.06
Circulation	799,247.50
Reserved for Taxes, Etc.	38,816.61
Contingent Account	289.02
Deposits	22,897,226.27

Total\$27,782,706.46

INTEREST PAID ON TIME DEPOSITS COMMERCIAL AND TRAVELERS' LETTERS OF CREDIT ISSUED.

I, W. T. S. Hammond, Cashier of the above-named bank, do solemnly swear that the above statement is true to the best of my knowledge and belief.

DIRECTORS

J. M. Elliott
Stoddard Jess
John P. Burke
John S. Cravens
W. T. S. Hammond

J. C. Drake
Frank P. Flint
M. H. Flint
C. W. Gates
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Trees

We are now booking orders for Winter and Spring delivery and will be pleased to receive a list of the nursery stock you expect to plant for our estimate of cost to you.

We have a fine stock of Deciduous and Citrus Fruit Trees—especially large quantities of Prunes, Apricots, Pears, Apples, Almonds, Peaches, Oranges, Lemons and Grapefruit; also a full line of Shade and Ornamental Trees, Shrubs, etc. All grown in our nursery plants in Fresno, Madera and Tulare Counties.

Please mention what varieties you are interested in.

Prices on application.

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Plant no Pears in Southern California

unless you buy trees grown on the Japan root, which is strongly resistant both to blight and the root aphid. Planting the ordinary French-root tree is simply courting disaster. For brief discussion of pear troubles, telling why, and catalogue, write to

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STOCK SEEDS. Payne's Giant Perfection. White, Flesh Color, Rose, Crimson, Sulphur Yellow, Light Blue, Dark Blue. Each, per pkt. 15c. All colors mixed, pkt. 10c.

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Catalog and Garden Guide mailed free.

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345 So. Main St. Los Angeles

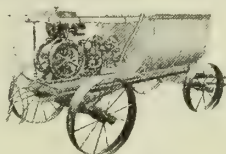
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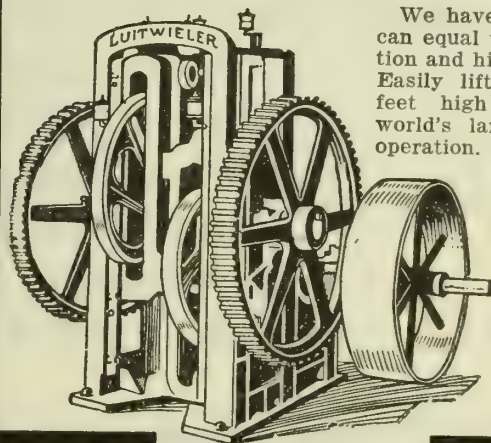
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CALIFORNIA CULTIVATOR

Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

November 25, 1915

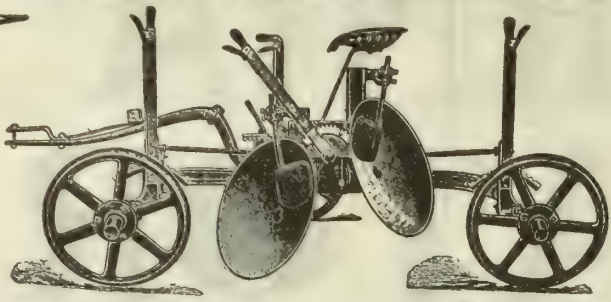
SAN FRANCISCO



When the California Walnut Growers' Association began shipping nuts it determined to send out only the highest grade product. Rigid culling threw out many of highest quality but of satisfactory appearance. This product is now being saved at the Los Angeles cracking plant of the association, where two grades of kernels or meats are being packed in attractive cartons with waxed paper wraps. These are commanding ready sale at satisfactory prices. The cracking machine is shown in the background of this picture; the long table is one of several.

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THIS is the only reversible disc plow which does not use segments to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—and stick to the work on hillsides.

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The rollers in the roller-pinions revolve on internally lubricated pins—no dust can get in to wear them.

They only press on the teeth of the big drive-gear—the real bearing surface is between the rollers and the pins. Friction is cut to the least possible amount and lubrication made unnecessary between rollers and gear-teeth.

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Rollers and gear-teeth fit snugly together—no looseness and loss of power.

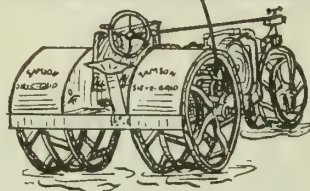
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 22

LOS ANGELES: THURSDAY, NOVEMBER 25, 1915

One Dollar Yearly

47th State Fruit Growers Convention

Marketing Methods, Rural Credits, Cooperation and Other Points Discussed, with Excellent Tractor and Farm Implement Exhibit on the Side. Tulare County People Give Cordial Greetings and Extend Courtesies to Delegates from All Parts of the State



MOST interesting week began at Visalia last Tuesday morning, November 16, when the State Association of County Horticultural Commissioners was called together by President William Wood. Secretary O. E. Bremner, and practically every member of the association, was present. Perhaps the principal point of interest had to do with the collection of accounts against delinquents who have had orchard property treated by county outfits and have failed to pay. This matter called for a special resolution as follows:

"Whereas, In a recent case in the superior court of Tulare County, brought to test the validity of a lien for fumigation of citrus trees, the court ruled that a prior mortgage held precedence, and

"Whereas, This ruling is contrary to accepted practice for 18 years and seriously affects the citrus industry by exempting encumbered property from fumigation without the consent of owner, which is often necessary, and

"Whereas, This case has been appealed to the supreme court of California; therefore, be it

"Resolved, That we, the members of the 47th convention of County Horticultural Commissioners in regular session assembled at Visalia, do hereby petition Frank M. Angellotti, chief justice of the supreme court of California, to advance this case if possible on the court calendar in order that a definite decision may be reached before the opening of the next fumigation season in July, 1916."

Officers elected for the coming year are: Charles F. Collins, Tulare County, president; D. D. Sharp, Riverside County, vice president; H. G. Kercheval, Sacramento County, secretary-treasurer.

The commissioners' meeting continued through Tuesday and Wednesday. Thursday morning President A. J. Cook of the state horticultural commission called the convention to order. After music and invocation a hearty welcome was extended to the convention attendants, to which Dr. Cook replied at some length, reviewing especially the accomplishments of the state commission. Amongst other things he referred to Prof. Fawcett's work when connected with the commission in the discovery of a remedy for gummosis of citrus trees; to the Weldon crop reports; to the victories gained in the California legislature, especially the securing of favorable congressional action controlling the unlimited shipment of quarantined material through the mails; to the fact that ten county horticultural commissioners have been added during the present administration; to the standardization laws of our own state legislature; and ended by saying:

"Several achievements yet await fulfillment. Each fruit county must have a county horticultural commissioner or inspector; the potato industry must be restored to its former prosperity; a few changes are needed in the parcel post regulation; improvements in marketing conditions, and possibly slight modifications in the standardization laws, and then we

may rejoice that the great practical horticultural system of California is well-nigh perfect."

Many addresses at the various sessions are far too extended to even be reviewed at this time. Two of them appear in this week's issue entire and more will follow in later issues of the Cultivator.

The cordial reception of all delegates attending by the committee and residents of Tulare County made the occasion a most enjoyable one. The

RURAL CREDITS AND COOPERATION

Address By Sheridan W. Baker Before State Fruit Growers' Convention at Visalia



COOPERATION among farmers is a proper and an inevitable evolution, though it has taken many revolutionary steps to bring the many attempts to an approximate success. In many notable instances coopera-

problems peculiar to its especial organization, it seems that the time is opportune for taking further steps for the proper correlation of all cooperative organizations in the state.

The men who handle on a commercial basis millions of dollars' worth of farm products and put them out in a finished condition have their associations for their mutual protection and benefit. The farmers' organizations should take the same measures for their further betterment.

There are delegates regularly elected or appointed by their several organizations present at this convention for the discussion of this side of cooperative effort and that phase of rural credits that will make the proper financing of these organizations a less difficult matter.

If it is possible to form a central organization of an advisory and protective nature for all growers' cooperative bodies, the benefits to be derived can readily be understood.

A league or association formed by delegates from the various organizations of the state will represent many thousands of growers, and by holding annual or semiannual meetings, very much good should result in a better understanding of each other, to begin with, and properly officered it can become a most potent force in the bettering of conditions for the California farmer.

If it is possible to have some such body in existence to which matters of large import can be submitted for consideration and advice, there is no doubt that great good can be done. This body, with a small executive committee composed of men who have been prominent in cooperative success, can materially aid newer organizations in analyzing their situations and advising the ways and means that experience has taught to be the safest. In other words we need some sort of a cooperative organization commission to look into the affairs of struggling bodies, to help them organize, to be adjusters, judges and council. We need an assembly of cooperators of every variety pertaining to the farm; we need more united action and cohesion for quicker results, and there can be no question as to the desirability that all farm produce should be handled cooperatively, except, perhaps, by those whose business it is to make a more finished product.

If it is possible for the farmer by cooperating to place his product on a market regulated by supply and demand and to be consistently in the market over a period of time, he will receive average prices and be safe. The law of averages will be working each season for the even return on his labor and investment.

The sooner we get the majority of California farmers into cooperative marketing organizations, the quicker the desirable results. If there is any body of men interested in seeing that the farmer gets a living price for his products it is the men who are cooperating. The chances of getting a seasonal average as to price are open only to the large operator or one so situated that he can sell an annual crop on installments. This is entirely practicable and feasible with a cooperative organization. It surely is far more desirable and better for the individual farmer to get the average

Continued on Page 513

COMMUNITY COOPERATION

R. V. Holland



HERE are comparatively few small town residents who fully appreciate what their home communities mean to them, not only from a standpoint of sentimental loyalty or civic pride, but in the way of dollars and cents as well.

Investigation has developed the fact that it is only in very rare instances that the individual has prospered in a community that is "financially sick", for the simple reason that individuals are directly responsible for the general local conditions.

How many times have you heard people living in our smaller towns, especially those towns that are adjacent to larger cities, express the opinion: "This town can never be much bigger, it is too close to City."

In other words people living in the small towns and their trade territories spend a large per cent of their money, which is produced locally, in the stores of the big cities nearby. One would be nearer correct in stating that these people live on rather than in their home communities, and it doesn't take a very able prophet to foresee inevitable results.

Failure to patronize local merchants is largely unwarranted, and as more people come to realize the effects they will face about and cooperate closely along lines that will tend to improve and develop the communities in which they live.

I once witnessed a manufacturer's salesman endeavoring to sell a small town merchant an extraordinarily high grade line of goods. The merchant admired his sample very much, but finally refused to buy on the ground that local buyers of this class of merchandise shopped in the stores of the large city close at hand and would continue to do so even though they bought the same brand of goods at identically the same price he would ask for them.

This merchant undoubtedly knew what he was talking about although it seems a shame that such conditions should exist. It only goes to prove that when small town people get into the habit of buying quality products out of town, local merchants become afraid to carry them in stock, and it isn't long before local markets are restricted to the lower grades of inferior goods.

It is, of course, unnecessary to say that no fair minded person would expect even the most loyal buyer to pay a premium for the privilege of patronizing home merchants in preference to sending or going away. However, modern merchandising and manufacturing methods enable the smallest town store to offer the same inducements in the way of quality, style, and price that can be found elsewhere, with the added advantage of personal service. A standard article represents the same value the world over.

When progressive merchants in the smaller towns become convinced that their trade will patronize them on standard products of known quality—provided their prices are as low as quoted elsewhere—they will not hesitate to carry them in stock.

The opportunity is yours to be a vital factor in the improvement of your local stores which will in turn greatly benefit the community as a whole and every individual residing in it.

committee on arrangements was: W. P. Bartlett, C. F. Collins, A. C. Merryman, Thos. Jacob, W. E. Sprott, J. K. Tuttle, Frank Daybell, C. W. Towt, C. B. Earhart, E. Barris and Dr. A. J. Cook.

The tractor, implement and orchard appliance exhibit which was a feature of the Los Angeles convention was repeated at Visalia, and the tractor display was a large and instructive one.

The sessions for women under direction of Miss Clark seem to be a permanent feature of these conventions and were given much better attention here than at Palo Alto.

tion among farmers for the marketing of farm produce has resulted in a very gratifying success, in others the degree has been relative and unfortunately in many others the attempts have met with disaster.

That cooperation is desirable is almost too patent to need comment, but it does appear that there is room for improvement in many of the details of handling the problems that are continually arising.

Taking into consideration the very large number of cooperative organizations in California, each fighting its own battles, attempting to solve the

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and

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DATES IN IMPERIAL VALLEY

Written for California Cultivator
By Paul Popenoe



AFTER 11 years of experiment the owners of the oldest date plantation in Imperial Valley (near Heber) have decided to give up, and have sold the palms to be moved to ranches near Indio in Coachella Valley.

It is natural that some of the Coachella people should attempt to make capital out of this fact, declaring that dates can not be grown successfully in Imperial Valley and that Coachella Valley is the one locality in California for the industry.

I regard such an inference as incorrect, and I think it would be a misfortune to the date industry should that inference become current. As my own date growing interests are all in Coachella Valley I can hardly be charged with partisan bias in defending Imperial.

It is a question of varieties. The palms at Heber were all of the variety Deglet Nur, which is at home in a fairly light soil and dry air. It comes from the oases of the African Sahara; it flourishes in the Coachella Valley; but it is not a great success in Arizona, and it has never, I am told, produced a single good, full crop in Imperial Valley.

Now the Heber plantation was laid out in the line of a drainage of air, where cool, moist air passed from the middle of August to December, causing dew that no good date would resist at the ripening stage.

Furthermore, the district in which the Heber plantation was laid out has about as stiff a soil as any in Imperial County. It is not easy to cultivate or irrigate properly. Any one familiar with the Deglet Nur would know at a glance that the Deglet Nur is unlikely to thrive in that locality. It might have done somewhat better around Brawley or El Centro where the soil is lighter. The attempt to grow it at Heber was foredoomed to failure and might well have been abandoned several years ago.

That is a very different thing from saying that Imperial Valley is not a good place in which to grow dates. I believe the lighter soils of it are a thoroughly good date country—provided the proper varieties are selected. In this belief I know I am in agreement with Bruce Drummond who represents the United States department of agriculture in the California date industry, and whose opinion on the subject is perhaps worth more than that of any other man.

To select varieties suited to the location is an elementary precaution that any careful grower, with the experience now available, would take.

And in my judgment the varieties which will succeed best in Imperial Valley are those from the Persian Gulf and Egypt where climatic and soil conditions are comparable. The Sahara back of Algeria whence have come most of the date varieties now in the United States, is altogether different.

Ten years from now I believe we will look back to the early history of the date industry and smile to think

how obsessed we were by these Algerian dates. It is hard even now to get a hearing for anything else.

Yet the experienced traveler knows that Algeria has very few good dates. For the Deglet Nur I have only words of praise; its greatest defect is that it will not grow in a sufficiently wide range of localities. But apart from that Algeria has some good dates, but no very good ones. The Persian Gulf region has vastly better dates which will soon be bearing in California and will then, I hope, be appreciated on their merits.

And Egypt, whose dates have been persistently ignored by us Californians for the last 20 years, certainly can furnish some varieties that will put the industry in Imperial Valley on a sound and highly profitable basis unless all the signs are misleading.

It is perhaps worth while to call especial attention to two of these varieties which seem to me of most promise for Imperial Valley. They are Hayani and Saidi.

The Hayani, which comes from lower Egypt and which in Arizona is usually called Birket al Hajji, is the most productive good variety that has yet been tested in the United States. At Tempe, Arizona, where there are a number of fine specimens, 200 or 250 pounds is not an unusual crop for it, and in addition it bears a prodigious number of offshoots. It is regular in bearing, the fruit matures evenly and loss is rare. At one time, F. H. Simons tells me, there was a drizzling rain for 48 hours, just as the Hayani was ripening. Under such conditions Deglet Nur and most other varieties would have perished the air for a mile around with the smell of fermenting dates. But not a berry of the Hayani was lost.

The fruit of this variety has been picked, packed and put on the market for three cents a pound. With such production we can defy the competition of any foreign district, no matter how cheap its labor.

The fruit hangs in huge clusters of a brilliant wine color; the individual berry is often two and one-half inches long. The flavor is good, the shipping qualities excellent. It ripens in the latter half of September in this country. The first Hayani palm to fruit in California bore a tiny cluster at Indio this year—just half a dozen dates as big as hens' eggs—when it was only three years old. But I am inclined to think this extraordinary variety could be grown to better advantage in Imperial Valley than anywhere else in America.

The second variety to which I wish to call attention is Saidi, which comes from the Libyan oases of Egypt. It is doing admirably at Mecca, but there is reason to believe that it would do better in a heavier soil, such as parts of Imperial Valley would furnish.

The variety has, so far as yet appears, no drawbacks. The offshoots grow well, they come into bearing fairly early and bear heavily, ripening their fruit about September 1. The berries keep and ship extraordinarily well, if properly handled, although the skin is somewhat tender. It can not compete with Hayani in prolificness, but after it reaches full maturity should bear 100 pounds a year.

The fruit is light and attractive in color, the flavor rich and sweet. It is an immense favorite in Egypt, and deservedly so. When better known I believe it will be a great favorite in the United States.

I have mentioned these two varieties because I think they are too little appreciated and would do particularly well in the Imperial Valley. There are plenty of other good varieties for that section. Imperial County can become a great producer of dates and I hope that none of its growers will make the mistake of becoming discouraged because this first experiment has failed.

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MARKETING OF CITRUS FRUITS Address By Hobart Webster Before

State Fruit Growers' Convention
at Visalia



HY are we here to discuss the question of the marketing of citrus fruits? Discussion implies unrest, a desire to improve. We must, therefore, conclude that the present results which we are obtaining in marketing our citrus fruits are not satisfactory.

It is not necessary to make any extended remarks on the financial situation and its effect on the citrus market. We all know that there is to be a certain amount of allowance made for failure to get remunerative prices when times are dull. Any production of a semi-luxury class, such as citrus fruits, is more affected by financial conditions than are those articles of food which are considered essentials.

The conditions other than financial are that we have an industry in which is invested a large amount of capital, the cost of maintenance is heavy, and the income is not proportionate to the capital invested. We cannot close down, as can the manufacturer, put a watchman in charge, and await a change; we must continue to expend large sums for maintenance regardless of the net income.

We seem to be threatened with an overproduction of a fruit which is not a food necessity, is perishable, and has to be marketed a long way from the point of production. It is a question whether we have a case of actual overproduction or whether we are face to face with poor distribution, owing to a large number of shippers whose different interests cause severe competition among the growers. A large share of the force that should be used in expanding the trade is being consumed in pitting the interests of the growers against each other. We should not cry overproduction until we, as growers, stop this waste.

Undoubtedly we should have no cry of overproduction if every dollar now being used to create competition were spent in increasing the consumption of our citrus fruits until every man, woman and child has had an opportunity to purchase them at a minimum price consistent with the most efficient means of production and distribution, plus a reasonable profit. If we have met these conditions and cannot market our fruit at a profit we have overproduction and the weak must go to the wall. We have had the cry of overproduction periodically ever since the output reached 1000 cars. It is no new situation, and with a proper system of distribution of all our citrus fruits, there is no doubt that the growers will continue to be able to find a market at a profit under normal financial conditions; but we are so much nearer the margin of overproduction than heretofore that it will take a much larger percentage of the growers to bring about successful distribution than it has required to solve the many other problems which they have met successfully.

The question of efficiency in distribution hinges on the mediums of marketing, of which at present we have two; namely, the Independents and the Exchange. At this point it is necessary to compare the interests of these two mediums and see which should be the more likely to be of greater assistance in helping to solve the question of a better system of distribution.

The Independents are in business to pack and market the fruit of the growers at a stipulated price; the sole object of which is to make money for themselves, thereby adding another middleman's profit to be deducted before the grower gets his money. The Independents are made up of a number of different firms, each shipping independently of the others, consequently, there is no system to their distribution collectively, and if the field were left open to them we have no reason to believe that they would maintain any universal system of distribution.

Another feature which must be considered in wide distribution is that to secure the best results it is necessary to maintain a standard package and brand for same, which shall signify the quality, and to be able to supply this package in large quantities

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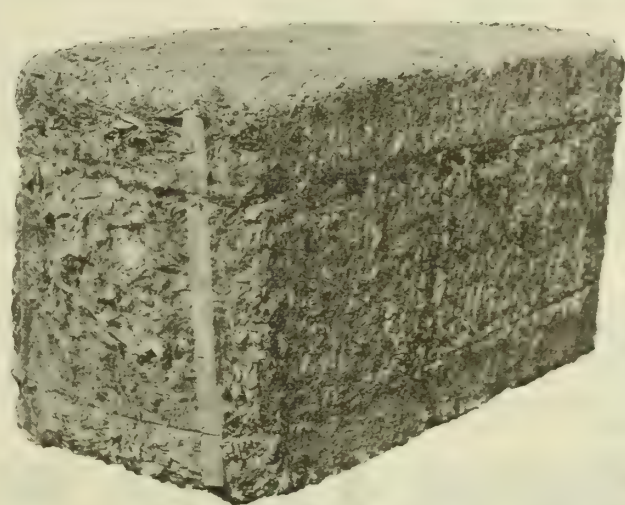
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so that an extensive trade may be worked up. The great number of Independents' brands, each placed upon the market individually, does not create any general demand for California fruit of a definite quality.

Again, if you stop to think you will realize that not a single Independent packer that is now in business was in business, at least under the same name, a few years ago. To the onlooker they produce a sort of kaleidoscopic effect, which is certainly not conducive to stability where large trade expansion is of prime importance.

In referring to the other marketing medium, the California Fruit Growers' Exchange, it is considered simply as representing the cooperative idea, that its policy is entirely in the hands of the growers and is subject to change to meet the varying conditions that may arise. What the policy is this year may be entirely changed by conditions next year, as the growers themselves see the need. Whenever you hear a grower say that he would be in the Exchange, if its policy were different on this, that, or the other thing, you may simply label him as a man who has no faith in his own convictions, for if his ideas are superior he will not find much trouble in securing their adoption.

The basic principle of cooperation is class selfishness. By cooperation the citrus growers desire to get their fruit from the trees to the market without paying any profit to packing and commission men, but to perform this service themselves at cost, and at the same time secure more efficiency. Many growers hope ultimately, through cooperation with other producers of California fruits, to reach the consumer directly. In other words, the growers, many of whom are men of wide business experience, desire to handle their own business collectively through cooperation and thus be able to meet, thwart, or absorb such opposing forces as menace the best interests of the industry. Thus have been met successfully these side issues through the action of the growers themselves and not through assessment by those higher up, as some

would wish the uninformed growers to believe. Besides doing this they have provided the necessary funds to carry forward the best interests of the industry, as well as to build, equip, maintain and operate their own packing houses, and still make larger returns to themselves as growers than have those who have shipped through other agencies and have no packing house property but are still indirect renters.

While the Exchange, representing last year 62½ per cent of the output of citrus fruits of this state, has solved most of the perplexing questions for the benefit of the industry, and although this per cent of the fruit is systematically distributed, there is that other 37½ per cent divided among a number of independent agencies, and you can no more tell where they are going to land with a few cars, and upset the distribution, than you can tell where those mosquitoes, buzzing around you in the dark, are going to strike next. Thus, nearly two-thirds of all the fruit is systematically distributed only to be upset by the other one-third, often resulting in demoralization of the market. It would not seem possible to the unbiased observer that it would take long for all growers to see that the two-thirds, with a well organized system of distribution, must be on the right track.

Some attempts have been made to find a common ground for uniting the interests of the Independents and Exchange forces on the question of distribution, but without success. It does not seem reasonable to suppose that they could find any common ground for the permanent agreement of two such opposing interests. The Independents are working to make money out of the growers; the Exchange is working to save money for the growers; and with such diverse interests these two opposing forces cannot unite successfully on this most difficult question of all, the question of distribution.

While there is a decided movement towards universal cooperation of the growers, such action is being greatly retarded by various causes which we would indicate as indifference, misin-

formation and prejudice on the part of the growers, together with a lack of concerted action by those already organized cooperatively. All Exchange growers must be aroused to the fact that whether their section is 50 per cent, or 100 per cent cooperative, it is just as much to the advantage of the one as the other that all growers join in an effort to make the 50 per cent section into a 100 per cent section, if we are to secure the most efficient distribution of our fruits.

The Exchange has spent large sums in advertising to increase the consumption of citrus fruits, while the Independents have expended their efforts on this end trying to increase the number of their patrons and thus secure to themselves more profits, which would result in increasing competition among the growers to their own detriment and adding confusion to distribution.

At this time there is no doubt that it will be advantageous to the growers to inaugurate a campaign of education along cooperative lines to arouse the interests of all, whether grower, business man, or laborer to the importance of boosting for cooperation, as it means more money for the grower to spend among all classes. Therefore, much as we deplore spending money for this purpose, it seems necessary to do so, that the industry may be carried quickly to a position where distribution will be under one head and systematized.

With a national marketing law cooperation would be still necessary to secure any real benefit, as has been shown under the New York state marketing law. Even the peach growers

of New Jersey have at last realized that cooperation is greatly to their advantage although they are at the threshold of the largest market in this country. It certainly seems that little argument would be required to convince any grower 2000 miles from market that it is even more necessary for him to cooperate with his neighbor.

I would now say to the grower, instead of wasting valuable time, energy and money in opposing cooperation because you think it is not conducted in the right way, would it not be much wiser for you to enter into the movement and, if your ideas have as much value as you place upon them, convince the other growers of the correctness of your views and thus add your quota to the good of the cause? You can do more good to any cause by getting inside and giving judicious criticism than you can do by staying outside and being an obstructionist.

Suppose that instead of numerous agents running about the country seeking business, which only creates competition and expense for the growers, we were all united into one cooperative organization; that the money now being wasted were spent on scientific help, or used in increasing the consumption of our citrus fruits; that in our organization meetings, or wherever individual growers were congregated, we had no need to discuss membership and how to secure it; but instead we were to discuss efficiency in production and distribution; does it require a great stretch of imagination to see us as we then should be, a well satisfied group of citrus growers?

Walnut By-Products

Written for California Cultivator By J. G. Berneke



WHAT to do with walnut culls and low off-grade nuts has become a more serious problem each year since the output has increased each year in proportion to the output of the merchantable nuts. The grower is

naturally anxious that the culls should help to pay the expenses of the ranch. Perhaps the walnut growers' problem as to the disposal of his culls is not so large nor so serious as that of the orange

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grower, but each is trying to solve it as best he may.

In a small way there has been an opening for walnut culls. Some growers have cracked them and sold the meats locally to confectioners and bakers. This outlet is naturally quite limited. A small business has been established for cracking culls and shipping the meats to Eastern buyers. A few established buyers of culls and meats, and peddlers calling at the grower's home for culls, have helped to take care of the output. Not only have prices been unsatisfactory, but the output was not entirely taken care of if it was at all large.

Attention was called to this condition about three years ago and the associations urged to take hold of this matter for their members. The suggestion made at that time was for each association to establish a walnut cracker, but to sell the meats through its central agency at Los Angeles. This year the associations established a walnut cracker in Los Angeles to serve the members of all associations. Centering the effort at one point may prove the better way. We must remember that this is still in an experimental stage, and time must elapse before a final decision can be made. It might prove more practicable for the larger associations to have their own cracker and ship the meats to the central house for grading and packing. Meanwhile we may feel that a step in the right direction has been taken and that improvements will be made as experience shall dictate.

A visit to the walnut cracker at the Walnut Growers' Association headquarters in Los Angeles recently revealed a beehive of activity. About 150 women and girls were seated at long tables, sorting and grading walnut meats. The culls are poured into a hopper, and an endless conveyor belt carries them into a grading drum. The different sizes drop into different compartments and go on to their respective rollers where they are cracked and the bulk of the shells fanned out. The meats run into a sack and are carried to the long tables, where the women sort them into four grades. They are packed in 25-pound boxes. It is proposed also to put some up for the family trade in half and one-pound packages. It is probable that the smaller package will prove the more popular. This is the case with the walnut packages. I was informed that orders had been received for nearly 3,000,000 of the California Diamond brand walnut cartons, 93 per cent for the one-pound size, and seven per cent for the two-pound size. This attractive package was illustrated and described by the California Cultivator about two months ago.

There is a suggestion for the sale of white halves which are so eagerly sought in the making of walnut candies. A small carton with isinglass window, holding four ounces; the carton of appropriate color and design to set off the white walnut meats, the carton to be nearly filled with meats, leaving room for the facing layer, which is to be seen through the window. Between the filling and the facing layer is placed a small booklet of recipes for the use of walnut meats. This booklet must of course just nicely fit the box. Whether the facing is put in first or last can be learned by a little experimenting.

There is certainly good reason to think that when walnut meats are offered to the public in this attractive form the demand will become nearly as active as it has in the case of the walnut packages.

The prices on walnut meats f. o. b. Los Angeles, as they were given me, may be said to be quite satisfactory, and this experiment promises success after the first difficulties shall have been overcome.

The use of nuts for food is coming into greater favor and will increase if walnut meats are in attractive and sanitary packages, with contents properly labeled and guaranteed. The instructions for use of walnuts are quite essential because the public must be educated up to it first.

The combination of ground walnut meats and fruits, e.g. canned or preserved figs, apricots, etc., makes a delicious and wholesome repast, and a little experimenting would teach us

how to guard against spoilage. Here are lines of research which might be profitably followed by our experiment

stations for the benefit of both walnut and fruit growers.

Walnut candies might also consti-

tute one of the by-products. We produce both the sugar and the walnuts in California.



"Behind each tree is our guarantee"

It looks as though there was going to be a greater shortage this year than ever before in trees of the best selling varieties. To avoid disappointment, send us a list of what you want and take advantage of the prices we make to those who order early.

It Pays to Plant Foothill Grown Trees

We recommend them for hardiness; for good, well-branched roots; for freedom from root knots; for freedom from disease. They are superior to trees grown on the river-bottom and valley-loam locations commonly chosen by nurserymen. That is why so many successful fruit ranchers buy all their stock from us. We grow a complete assortment of all varieties of citrus and deciduous fruit trees and vines.

When you buy from us you are buying from a firm who are fruit growers and shippers as well as nurserymen.

We know all the troubles of the fruit grower and can offer him a service that he can not get elsewhere. Our knowledge is first hand—we learned by experience, and this experience is yours free—for the asking. Write us—tell us your troubles. We may be able to help you.

Here Are Some of Our Big Paying Specialties

Prunes

Selling now at a 5c basis, are again demonstrating that of all fruit grown they are the most stable for profit. There is always a shortage of trees in FRENCH, IMPERIAL, ROBE DE SARGENT, SUGAR AND STANDARD ON MYROBOLAN ROOT. These are the best selling varieties this year and there will again be a shortage. We have a fine block of trees on Myrobolan root in each of the varieties named—foothill grown—selected in propagating—fine, hardy trees.

Write us for prices and get your order in at once while the trees can be reserved for you.

Cherries

Cherries are great money-makers in California, and on locations adapted to their culture they are as good as you can plant. There is often a shortage of trees in the best varieties. We have a good stock on both Mahaleb and Mazzard root, and if placed now can take care of your orders in any of the following: ROYAL ANNE, EARLY BURBANK, EARLY CHAPMAN, EARLY PURPLE GUIGNE, BLACK TARTARIAN, BING, LAMBERT AND BLACK OREGON.

Walnuts

When you buy a Walnut, more than any other tree, in view of the variations from the true type, you want a tree pedigree and true. Our scions of Franquet and San Jose Mayette are cut by the pioneer walnut expert of the State, R. Wiltz of San Jose, and from trees he has had under his personal observation for years and which are of the true type and selected for performance. This is the highest pedigree given a walnut. Write us at once for full information and prices.

Shipping Plums

We have a complete assortment of every standard variety of Shipping Plums on Myrobolan root, Bitter Almond and Peach root. Write for our catalog, giving complete and accurate information concerning every variety of Shipping Plums. Let us have a list of your wants for prices. Place your order now while our assortment is complete.

Pears

On both Standard French and Japanese root. We have a fine block of trees, well rooted and hardy, in Wilder, Lawson, Bartlett and all of the later standard fall varieties.

BARTLETT PEARS, as well as all of the standard Fall Pears, have this year made a good record for the California grower, as they do every year. No fruit more profitable or with a better future.

OUR BIG BARGAIN OFFER TEN SELECTED TREES \$3.95

We take such pride in this selection that we have named it

Bergtholdt's Special Selection for Home Orchard

It consists of ten best grade 4/6 foot deciduous fruit trees, including one grafted walnut. This will all be delivered at your postoffice address, freight prepaid. You can make your own selection or leave it to our judgment, and we will give you a fine selection of the very best varieties for a home orchard.

Take advantage of this low offer at once and secure \$3.95

a home orchard that you will be proud of for only \$3.95. Write for our list of combination offers for home planting and our free booklet on California fruit which gives you an accurate description of each variety. Write us a list of your wants for prices—DO IT NOW.

SILVA-BERGTHOLDT CO. Box B, Newcastle, Cal.

Apricots

California has the monopoly in the production of this fruit, always profitable, and future prospects never better. There is usually a shortage, particularly of Apricots on Myrobolan root for planting on heavy loam or poorly drained locations. We have a fine block of Apricots on Myrobolan root in all varieties, as well as on Apricot and Peach root.

Olives

We are offering a limited number of trees of Mission Olives worked on Picholine root. Write us now and get in on this stock. We have also an assortment of varieties grown from cuttings.

Almonds

Are in great demand and there will be a shortage. We have a fine block of trees on Bitter Almond and Peach root in all the standard varieties.

Clingstone Peaches

This year's crop suffered from war conditions, but canners are cleaned up and are sorry now they did not make a larger pack. Bear in mind the California Clingstone has a monopoly of the world's market for canned peaches—regularly productive, can be successfully grown nearly everywhere—a good money-maker in the past and will keep up this record in future. OUR IMPROVED TUSCAN is preferable in every way to the common Tuscan in the following features:

- 1st—More regularly productive.
- 2nd—Perfectly round; uniform size and symmetry.
- 3rd—They do not split pit.
- 4th—They do not gum.
- 5th—They do not windfall.
- 6th—They are fine grain, of superior canning quality and command a premium of from two to five dollars per ton over the ordinary Tuscan.

Hauss Cling Peaches

A seedling from Phillip Cling, and has all the desirable features of that splendid variety. Ripens immediately after the Tuscan, filling the intermission between the Tuscan and Phillip when canners are running light and always command a premium. Identical to Phillips in quality and productiveness.

Phillips Cling Peaches

Our Phillips Cling are of the true type and but one generation removed from the Phillips Cling first introduced. Very few are aware of the fact that the Phillips Cling, as commonly propagated, is deteriorating from the true type in the successive propagations.



The "S-B-U" High-Pressure Power Sprayer

Built along advices of Horticultural Experts and prominent growers, to do "high pressure" work with wonderful results after fog-sprays and fumigation had failed.

Own your own High Pressure Spray Rig and be in a position to SPRAY WHEN YOU SHOULD. The right time to spray is at period of incubation or hatching of Tree Pests, don't compel yourself to rely on hired spraying or fumigation.

Write for Circulars "S No. 2".

Smith-Booth-Usher Company

228-238 Central Ave.

Los Angeles, Calif.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Water Right

There is percolating water near some land I own, and it is in the forest reserve. Can a person condemn it for agricultural purpose or file on the water? It is supposed to be railroad section. Railroad never has had

title to it. One of my neighbors has been using the water from near this source for the past 20 years. What right has he other than squatter's right?—Subscriber, Redlands.

You are entitled to appropriate percolating waters subject to the provision that any other land holder whose waters are also supplied by such percolating waters may prevent you from taking the waters so appropriated to distant lands which do not overlie the common supply, if your taking is found to be injurious to him. Your neighbor has acquired by his use a right to the water which he has taken under Section 9 of the act of congress approved July 26th, 1886, if these lands are and at all times have been government lands.

Stray Stock

Can I collect for damages done by stray stock on a place that is not fenced? I took stock and fed them for 15 days before owner called for them. Can I collect for feeding?—Subscriber, Moorpark.

You could recover for the feed of the stock. It is impossible to state from facts given whether or not you would be entitled to recover for damages, however the presumption is that you would not.

Interest on Note

I purchased engine and pump, part cash and balance in notes. Verbal promise of delivery in a week or ten days. It was 30 days. Can interest be collected on notes for time between date of contract and delivery of goods. Contract refers to delays due to fire and transportation delays only. Above notes are payable "on or before" certain dates. I paid one "before" due, directing cancelled note to be returned at once. It is now 50 days since it was paid. Can I collect interest on note or the cash used in paying it, and what rate if I can?

Unless you could definitely show that time was the essence of the contract it does not appear that you could recover for the delay stated, as it would appear from your statement that a delivery was made at the selling place of the seller and that you assumed responsibility for carriage therefrom to your place, besides that, 30 days would hardly be considered an unreasonable time.

Horse Removed from Pasture

If B has a horse in A's pasture and C, who has a horse in the same pasture, takes B's horse out by mistake and B rides about five days to find the horse could B collect from C or A for the time he spent hunting his horse?—Subscriber.

The keeper of the pasture was at fault in permitting the horse of B to be taken out, and B would have to look no further than the keeper of the pasture for the time lost and expense incurred by him in finding his horse.

Oral Lease

B orally agreed to lease a ranch to A for term of two years, rent payable every quarter in advance. Subsequently B refused to execute written lease and required only one and one-half months' payment in advance and at same time orally notified A that upon the date to which his rent was paid he would be required to vacate. Has A the right to a written notice to vacate?—Subscriber.

An oral lease of real property for a period of more than one year is invalid and cannot be enforced. In order that B may legally eject A from the premises he must serve him with notice in writing at the end of the expiration of the period to which he has paid his rent, requiring him to deliver up the premises within three days. This notice is prerequisite to any action being brought by the landlord to enforce the delivery of the premises.

Tenant Selling Fertilizer

Can a renter haul off and sell fertilizer if nothing is mentioned in the lease about it? Barn yard fertilizer or bean straw?

A tenant is entitled unless the lease otherwise provides to sell fertilizer from the land.

Save Money on Wire Fencing!

-send for WHITING-MEAD'S Free 1915 catalog showing how to save 20% to 40% on Building Material

Warner Fencing \$4.10, \$4.90, \$5.55 per Roll, for Stock and Poultry

This class of fencing is known all over the country and usually sells for considerably more. First placed on the market some ten years ago to meet the demand for a substantial combination stock and poultry fencing.

It is closely woven and made of No. 14 galvanized wire, the spaces between the wires being graduated from the small mesh at bottom to keep chickens in, to the regular stock fence mesh at top. Has heavy cable edge at top and bottom, which enables it to withstand sudden shocks without injuring the fence.

Ten rods to roll and sold in full rolls only.

Height inches	Approx. Wt. per rod	Stays inches	Bars number	Price per roll
35	7	6	15	\$4.10
45	8	6	17	4.90
55	9.2	6	20	5.55

POULTRY FENCING \$3.25, \$3.60, \$4.30, \$4.90 PER ROLL—GRADUATED MESH—GALVANIZED

Has many advantages over the ordinary poultry netting, being three times as strong, does not require a top or bottom board, as the selvege wire at top and bottom may be stretched to give perfect close fit to ground, and the top affords no place for chicken to rest.

All the features of the popular heavier fencing, including the interlocking mesh, with special graduated mesh to keep small chickens in. Sold in full rolls. 3 ft. high, \$3.25; 4 ft. high, \$3.60; 5 ft. high, \$4.30, and 6 ft. high, \$4.90.

WARNER HOG FENCING \$5.00

Specially woven hog fencing, with barb wire selvege at bottom, which effectually prevents hogs raising the fence, and does away with the necessity for and expense of bottom boards.

Made of best quality No. 14 galvanized wire, height 26 inches; weight per rod 4.5; stays, 6 inches; with 7 bars barbed at bottom. Sold in 20-rod rolls only, \$5.

POULTRY NETTING 45c, 60c, \$1.10

GALVANIZED—2 IN., 1 1/2 IN., and 1 IN. MESH.

A great special buy, amounting to almost a full carload, in these much wanted sizes. Remember, it's all perfect in every way.

1 in. mesh, \$1.10 per 100 sq. ft., 18, 24, 36 and 48 inches high. 1 1/2 in. mesh, 68c per 100 sq. ft., 24 inches high only. 2 in. mesh, 45c per 100 sq. ft., 18, 24, 36 and 72 inches high.

These prices will apply only so long as this lot remains in stock, so get your orders in early as they will be filled subject to stock on hand.

FENCE STRETCHER AND COMBINED HOIST \$1.25

A most necessary tool in erecting wire fences and very handy to have on the farm at all times.

May be used as a lifting hoist, similar to block and tackle, has automatic catch which holds wire or load at height required. Thousands in successful use. Two sizes, \$1.25 and \$1.50 each.

"Standard" Roofing Paper

A splendid quality of roofing paper that most farms would sell 20 to 40 per cent higher. Each roll complete with necessary cement nails, etc., ready to lay.

1-ply, double-sanded, per roll of 108 square feet	\$1.15
2-ply, double-sanded, per roll of 108 square feet	\$1.40
3-ply, double-sanded, per roll of 108 square feet	\$1.65
1-ply "King" smooth, per roll of 108 square feet	\$1.25
2-ply "King" smooth, per roll of 108 square feet	\$1.50
3-ply "King" smooth, per roll of 108 square feet	\$1.75

Send for free sample. Remember we ship direct to you.

Everything in New Building
Material for Less

Whiting-Mead Company

9th and Maple Ave., LOS ANGELES

PAINTS! PAINTS! PAINTS! WE BEAT 'EM ALL PRICES

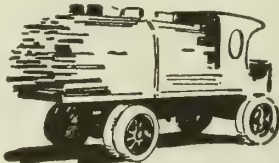
Our paint department is now in full swing, a complete stock having reached us since the recent fire. We can give you the lowest prices ever on paints, brushes and painting supplies.

Standard House and Floor Paint \$1.50 gallon.

Standard Porch Paint \$1.75 per gallon.

Black Graphite Roof Paint 50c gallon in 5 gallon lots.

Standard Shingle Stain 50c gallon in 5 gallon lots. All colors except grey.



Oregon Pine \$10 to \$15

Good new rough Oregon Pine Lumber, all sizes, at \$10 to \$15 per thousand.

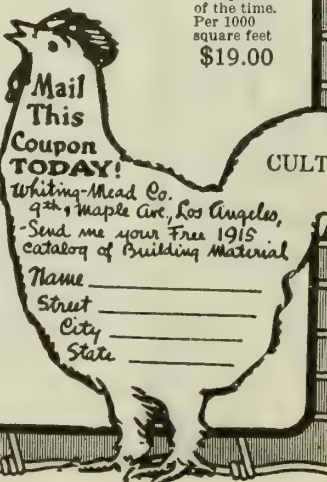
Oregon Pine Lath, 4 ft., new, \$2.50 per thousand.

Best grade Slashed Grain Oregon Pine, sanded finish, \$37.50 per thousand. This makes a beautiful interior finish.

These prices will give you an idea of how our lumber department can save you money. Send in your lists and let us give you our price delivered.

\$30 Wallboard \$19.00

The highest grade wallboard on the market, made of 3 layers of moisture-proof fibre, with asphaltum between each layer; or cream white fibre board. Cheaper and neater than plaster or lumber and any one can install it in one-quarter of the time. Per 1000 square feet \$19.00



FRUIT GROWERS' CONVENTION

Continued from Page 507

price of a season than the man who buys from the farmers for resale.

Most of the farm produce should be put upon the market in a finished condition by the farmer or he should pay someone to do it for him. If the ones he pays to finish his product abuse the chance and improve the opportunity for speculation, the farmer will have to take into his own hands the

preparation of his products in a merchantable condition and attend to the marketing of them. The farmer who sells the product of a year's toil, having contended with the many obstacles of pest, disease and the uncertain results of climatic conditions, in one sale, does not have a fair chance at profitable returns, but if through his cooperative organization he can be consistently in the market over a period of time he is reasonably certain of making a profit if the law of supply and demand can operate.

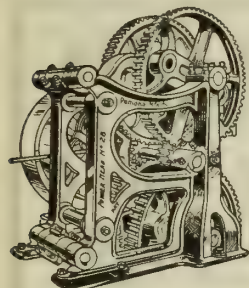
The greatest handicap under which young organizations especially have to work is a lack of the proper financial arrangements that will enable them to make advances to growers upon delivery of their crops for sale. The average non-cooperative farmer in California is willing to concede that cooperation is the proper thing for him, but his usual reason for staying outside is that he cannot get his money when he delivers his crop. To make advances to growers requires

handicapped work to reach it, and it is surely more desirable to have the products of the farm come quickly into cooperative hands than to have a smaller percentage supporting a long and painful struggle.

The sooner we can get the majority of California farmers into cooperative organizations for the handling and marketing of their products, the sooner will a greater prosperity come to the state, and the quicker we make it possible for the organizations to obtain the proper credit, proportionately we make our land values higher and our income more.

It is of no concern to the men who buy the products of the farm for re-handling at a profit if the farmer is making money; it is often to the buyer's advantage if the farmer is losing, for he can drive a better bargain with a sorely pressed man. It is of the greatest concern to the mass of our people that the farmer should prosper.

The tremendous problem of getting a fairer share of the consumers' dollar to the farmer is being worked upon by many of our brainiest men. How much easier would their task be-



For
Steady,
Consistent
Work, the
Pomona
Pump
Beats
Them All.

For more than 12 years we have been building and selling Pomona Pumps here in California and hundreds of users will attest their worth.

Pomona

Deep Well PUMPS

—combine economy and efficiency. They are always on the job—seldom require repairs—and have a proven record for high efficiency.

Buy a POMONA for deep lifts, as well as shallow lifts, combined with high heads above surface and through long pipe lines. No auxiliary pump needed for pumping water above surface.

WRITE FOR CATALOG
NO. 103

containing valuable information on irrigation. In writing please mention the depth of your well and where located.

Pomona Mfg. Co.
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Cushman Light Weight Engines For All Farm Work

Most useful farm engines. Built to run without trouble and do things no other engines can do. Throttle Governed. Friction Clutch Pulley. Run at any speed. Very light weight, easy to move from job to job. 4 H.P. weighs only 190 lbs. Sizes 4 to 20 H.P. 10-year Guarantee. Not a cheap engine, but cheap in the long run. 40-page Engine Book free. CUSHMAN MOTOR WORKS 304 North 21st Street Lincoln, Nebraska

Cushman Engines are distributed from Pacific Coast points, making quick shipments possible.

WIND MILLS

Our steel mills are well made. Thoroughly guaranteed. Large bearings. Heavy gears. Write for complete information. Angle towers also furnished. ARNOTT & COMPANY, Inc. Wholesale Implements 112-18 South Los Angeles St., Los Angeles

PEACH GROWERS OF CALIFORNIA:

The undersigned committee, appointed by the regular state committee on organization of the Million Dollar Peach Company, appeals to you to sign the subscription list of the proposed company on or before November 27.

We are arranging to hold mass meetings in all the peach growing districts of the state on Saturday, November 27, and most earnestly ask you to attend your local meeting and sign your acreage on the basis of \$20 an acre, to enable you as a grower to incorporate your company within the time limit which expires January 1, 1916.

How much longer shall we growers compete against one another in disposing of our peaches? Don't wait for your neighbor, but sign up and then have him do likewise before the close of November 27, and help correct the evils that have brought our peach industry to the verge of ruin.—T. B. McKelvey, Wm. Robertson, M. H. Bixby, F. H. Wilson, John C. Rorden, Ray Humphreys, W. J. Wilson, Committee.

proper credit. With proper credit accommodations for short time loans the cooperative body, well organized and managed, can control 60 per cent and more of the crop in its vicinity.

Short time loans is a phase of rural credits that is possible to put into effective operation by the united efforts of the various growers' organizations of the state. If the growers' cooperative bodies can get the proper short time loans, cooperation in California will come into its own and the balances can be put upon the proper side of the ledger for our farmers.

The greatest objection from a farmer's view point to cooperation is the fact that it is not possible to have all or a large portion of the money from a crop when it is delivered. Many farmers can wait and are so situated that they can get accommodations from their banks on their personal security, but unfortunately many farmers, needing the aid of cooperation, have to sell their crops when they can and at the price they are able to get. Of course transactions of this sort make it doubly hard for the organized farmers to operate. If we can put our products on the market throughout the season better average prices can be obtained and the law of supply and demand be given a chance to become effective.

To eliminate speculation we must organize; to organize before we reach the starvation point we need proper credit. It is a sad commentary that many growers have to go through the direst need before they awaken to the necessity for cooperation. Many of us do not want to wait until we have reached the starvation point before we put up our last dollar into funds for financing our organizations. We can use the money to very good advantage in cultural improvements.

If we can get an advance payment upon our crops at the time of delivery of sufficient money to pay for the harvesting, and within 30 to 60 days receive 50 per cent of the value, we can do most of our own financing; but to get the advance upon our crops, which can be secured by warehouse receipts or community security, is the present urgent need of the average cooperative society.

Many organizations in the state have reached the happy place where they have little or no difficulty in securing the proper accommodations, but it has usually taken years of hard,

come if we could control the products of the farms of the state in our growers' organizations.

A proper realization of the necessity of short time loans, a realization of a plan that will make such loans desirable, will give a wonderful impetus to cooperative efforts.

We will have rural credits in California notwithstanding a defeat recently at the polls, but let us unite now to secure that kind of rural credit that will enable our cooperative organizations to successfully compete with the men who have been piling up profits out of handling and reselling our goods.

If we have a board of examiners, a commission or a committee selected from a league formed by cooperative bodies of the state, versed in financial matters, conservative and just, who will make examinations into the affairs of our cooperative organizations and pass upon the amount of credit they should be entitled to, and take such steps to see that the credit is obtained, a better understanding of the desirability of this sort of credit will be a resultant.

In loaning money to cooperative organizations there is one very important feature that should not be overlooked: In loaning money on growers' products in warehouses or in the control of the selling organizations, the goods are owned, and while a grower may take a lower price he is not going to lose money on that particular product in a speculative way for it is not bought with borrowed money to sell at an advanced price.

As a rule the country banks will loan money to growers properly organized and managed, but the city banker, from whom the large amounts necessarily must be obtained, has little knowledge of, or sympathy with, this sort of security. The city banker is not altogether to be censured for his skepticism, and it is readily to be understood why a body of farmers loosely organized and easily stampeded by the attacks of those whose interest does not lie in cooperation for farmers cannot offer the security most readily convertible; but we as farmers contend that when well organized, with valid contracts between grower and organization, we offer a security doubly good, for it has not only a community real estate backing, but has a tremendous moral force behind it.

TREES

All Varieties

True to name

Deciduous Citrus

Ornamental Palms

Shade Trees

Roses

Vines & Plants

Our Nurseries are the largest in the West. We can supply your wants in every line. Send for our

Free Annual Illustrated Price Catalog

It lists and describes over 2000 varieties of trees and plants. You should have a copy. If you live in Southern California it might be more convenient for you to address our representatives: Roeding & Wood Nursery Co., 1607 East Washington St., Los Angeles, who will give your every want the most careful consideration. Write us when in need of any kind of nursery stock.

PAID UP CAPITAL \$200,000.00

FANCHER CREEK NURSERIES

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Box 12 Fresno, California.

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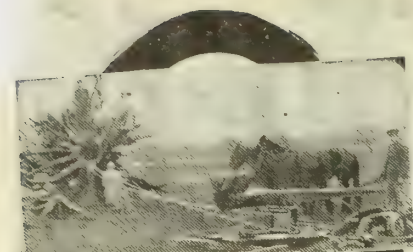
THE PIONEER GEAR \$75.00

This gear is fully warranted by us. Is built with 3 1/4 inch hickory axles. Wheels are 40 and 44 inches high with tires 4 inches wide. Heavy gear brake. Truss rods under axles. Steel front hounds. Drop pole doubletrees, neck yoke and stay chains. We defy competition on this gear. Why pay more. Without fail see this before you buy any other. Order from your nearest dealer, or direct from us. Beware, however, of something "just as good." Other gears from \$30.00 up.

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THE virgin soil that the stumps keep out of cultivation in the best soil you have. You can pull out an acre or more of stumps in a day at a cost of from 10 to 50 per stump. No matter how big or tough the stump, it walks right out when the Hercules gets hold of it. With the stump come all the long tap roots that spread out in all directions. The land is left ready for cultivation.

HERCULES Triple Power Stump Puller

Let us send you proof that thousands of farmers have made big money by the Hercules. Get our money saving proposition. HERCULES MFG. CO. 1128 24th Street, Centerville, Iowa

We Make Portable Hand Pullers

Exterminate Squirrels

GOPHERS, PRAIRIE DOGS, BORERS, ANTS, RATS, ROOT APHIS, ETC.



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It is absolutely effective, and leaves no injurious effect if inhaled while handling.

Use NONPAREIL for killing Morning Glory.

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628 CALIFORNIA STREET San Francisco, California.

ALL STEEL \$59²⁵ GARAGE

The Butler "Round Roof" SIZE 10 X 14

Full protection and at least cost. Fire-proof. Corrugated. Easily put up. Attractive in appearance. Portable. Useful as a machinery, tool or storage building. Additional sections to increase length furnished at any time.

If your dealer does not handle, write us for full information and prices on other sizes.



BUTLER MFG. CO. 276 Butler Bldg. Kansas City, Mo. Grain Bins, Tanks, Silos. Write for booklet on Stock Fountains and Hog Furniture.

RHUBARB

IF WAGNER'S IMPROVED WINTER RHUBARB

is planted during October, November or December, which are three of the best months. Good Results Should Be Derived by Spring. Write for Special Price on Plants for Fall Planting.

J.B. WAGNER Rhubarb-Berry & Cactus Specialist PASADENA, CALIFORNIA

Macatawa Everbearing Blackberry

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Two hundred carloads of walnuts had been shipped from the Santa Ana packing house the first of the month

The Lawn and Flower Garden

USES OF VINES

Written for California Cultivator By Ernest Braunton



THE uses of vines are many and their value lies in their ability to quickly cover objects that are unsightly, to serve as screens and to embellish and give finish to various styles of architecture. The latter use is the nobler one. There is no other class of vegetation that will qualify for similar uses and none that will so quickly hide large objects, for trees of a sufficient size to attain like results would require many times the number of years necessary to the vine. Likewise are vines, properly used, one of the best of materials for making attractive the home and surroundings. When one views an unattractive house or other unsightly building, notes naked rubbish heaps, unmasked clothes lines and other objects more or less unbecoming at the rear of houses he cannot but marvel at the shiftlessness of the owner when vines that would obscure are so cheap and obtainable everywhere. In pleasing contrast do we note pergolas, arbors, covered seats, fences and other objects built for the express purpose of growing vines upon. How often are huge stumps, rock piles, etc., changed from ugliness into beauty by the generous use of vines. How often in nature when trees die or man burns the fair face of nature do the native vines respond to repair the damage.

Vines are as varying in habits as are members of the human family. Some wish to grow aloft and will ascend any upright object, while others will persist in remaining under foot and sprawling over the ground. Some climb by simply twisting their stems about various objects. Some have tendrils for the special purpose of climbing; these are the true vines. Others climb by leaf-stems or petioles, while still others have aerial rootlets or have sucker-like disks that will almost fasten on smooth glass. It is an odd fact that those that adhere by rootlets do not twine, or seek other means of support, but grow straight up, evidently scorning all other classes of vines as being inferior in that they need aid or assistance in their ascent. Another curious character is that while the hop will twine around with the sun, the bean and morning glory and nearly all others twine in the opposite direction. Cooperation is well illustrated in cases where vines grow above the support provided. They will twine many stems into one, which latter, so stiffened, will ascend to the point where supports are again within reach. Then will each stem again assert its individuality and climb by itself, alone and unaided.

Chrysanthemum Buds

Numbers of people have told me that they do not understand the 'mum growers' catalogs when they speak of crown and terminal buds, and one said she could not distinguish between them after reading descriptions in my garden book. Well, here goes for another trial at plain English.

The crown bud is a solitary bud, the first to appear, on the top of each stem, before branching starts. Terminal buds appear in clusters at the ends of the later branches, thus terminating the season's growth. As a general rule the largest flowers are from the crown buds, though there are a few exceptions.

Care in Transplanting

Watch carefully over all transplanted subjects for at least several days. Too many take a plant home, put it in the soil, water it once, and because it revives through this watering, conclude it is thoroughly established and no more care is needed. On looking at the plant a few days or a week later the planter is greatly

surprised to find it is dead. Some think it the work of a gopher, but it is due to the absence of "go for." The initial revival was like the cry of the Roman gladiators "Morituri te salutamus." "We, about to die, salute thee." In some soils as the water dries away the soil contracts and leaves an air space all about the stem and main roots. A firming of the soil and another watering is thereby indicated.

A Dry Soil Iris

Every year I hear complaints of ill success with Iris Susiana which should be called "the gloomy iris" and regarded merely as a curiosity albeit the blossoms are the largest of all. This oriental sort likes a heavy soil in a hot, dry place, for heat alone will make for size and vigor. When left in the soil over winter the roots of this sort quickly perish through excess of soil moisture. When past blooming keep them as dry as possible and when tops yellow remove from soil and dry thoroughly. They are very tenacious of life and will grow quickly if withered, wrinkled, and leathery in texture.

Success with Roses

Many cases of ill health in roses which I have closely investigated have been due to lack of drainage. While roses like a heavy soil, this does not mean a close, undrained one, for the plants will not thrive with wet feet. If the drainage is good the heavier the soil the better will be the roses. Four feet of rich but very heavy soil would produce a wonderful lot of flowers even though the ten feet next below was of solid fruit cans and rubbish or broken brick and stone.

House Plants

Why should we have house plants in California? Porch plants are permissible, for I would not discourage pot plants though I have none myself. I aim to have enough in the garden so that pot plants would prove no source of pleasure to the better half of the household. But flowers; have them everywhere, indoors and out—have a dozen vases about the house if you have room for them. If you will have porch plants over which to exercise a tender care, very well. But all will grow better in the garden with one-fourth the care, except it be in colder parts of California.

Summer Arbors

When contemplating summer retreats and seasonal shade keep in mind a framework for an arbor covered with the chayote vine. It will grow vigorously all summer and in autumn give you a fine crop of most excellent squashes, for the chayote is but a one-seeded squash, the only plant of its kind in the great family of melons, cucumbers and the like. The fruits may be used in every way that squash is used and have as much food value as the best. I have seen many arbors covered with this vine and all were satisfactory. When frosts come the chayote usually retires to private life until spring.

House Borders

If no other planting be done about the house do not neglect the border close about the house. If this angle, made by the ground and the house walls is filled making an easy and smooth transition from architecture to nature, the effect of the whole can scarcely be displeasing. Shrubs of small growth are better than herbaceous plants for the latter should be but incidentals in the scheme of planting. The higher the floor from the soil the larger should the shrubs be. It is especially desirable to fill in heavily on each side of steps and in corners of the house.

Wild Flowers

Once again let me urge you to grow

a wild flower garden, and now is the time to prepare it. If you will try this scheme just once it will be proved for ever and aye, for the charm of such a plot is an ever-changing yet sufficient one. Every week will bring a new crop, new flowers, new color scheme, a perfect floral kaleidoscope. Being native, and therefore peculiarly fitted to local conditions, all plants will enjoy the best of health for you need do nothing for them after planting. Sunshine and rain will provide every necessity and the results will fully satisfy.

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Questions

THE EDITOR

and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Tepary Bean

Is the tepary bean valuable as a marketable bean locally?—Subscriber, Fullerton.

The tepary has yet to make a place for itself in the market. It will do it for it is an excellent bean with a flavor which is usually preferred to that of the white navy, which it resembles. The larger markets have been approached as to quotations, but no one seems to have very definite ideas as to its place. So far it is usually quoted and sold as white navy. We think planters should use care in selecting seed, and if the white is preferred, select only the whitest and best of seeds. It must be borne in mind that while the tepary has been grown for a greater number of years in America than any other bean it is commercially new, and until its place in the market is established care must be taken in seed selection.

Gypsum—Lime

I am told that gypsum loosens up the soil. Would it be desirable to put it on the orange orchard, and how much should be used?—Subscriber, Olive.

Gypsum is not so valuable to lighten up soils as is the ordinary slaked or sugar house lime. A still better "lightener" is coarse, strawy manure or similar mulch which allow the air to enter the soil, thus giving opportunity for bacterial activity. It must be borne in mind that the addition of chemicals alone to land, no matter how rich in the elements of fertility they are, does not necessarily increase its productiveness. Soil must contain sufficient vegetable material or in some way must be put in such condition that it will permit the introduction to it of air and moisture.

Stable Manure—Barley Straw

Have you reliable figures as to comparative value of a ton of stable manure which, when shipped to us here, costs in the neighborhood of \$2.50 per ton spread on the orchard, and a ton of ordinary barley straw in orchard, not spread, at \$7.50? I understand the fertilizer value of common bean straw is higher than grain straw.—Subscriber, Orange.

It is impossible to tell you the value of the stable manure which you are buying without knowledge of the feed of the stock which produces it. The value of plant food in a ton of average manure, according to Van Slyke, is about \$2.50 for horse, \$2.20 for cow, \$2.00 for pig, \$3.20 for sheep, \$2.35 for steer and \$4.40 for hen. Note we say "average manure". Where a horse is fed on grain and the bedding is so arranged as to absorb much of the liquid such manure has greater value. We are not able to turn to values of barley straw. Oat straw is quoted by Hopkins as having a value of \$3.30, wheat straw \$2.58. This would make it appear that \$7.50 per ton for barley straw would be higher than could be paid economically, but it must be borne in mind that the figures given are based on plant food value without

any reference to mulching and humus value. There is much more humus forming material in a ton of dry straw than there is in a ton of stable manure saturated with liquid. The value of bean straw is of course much greater than barley because of its higher nitrogen content. Its value from an analysis standpoint would possibly reach eight or nine dollars.

Pruning Grapes

Please give information regarding pruning grapes in the northern part of

the state.—Subscriber, Wyandotte, Butte County.

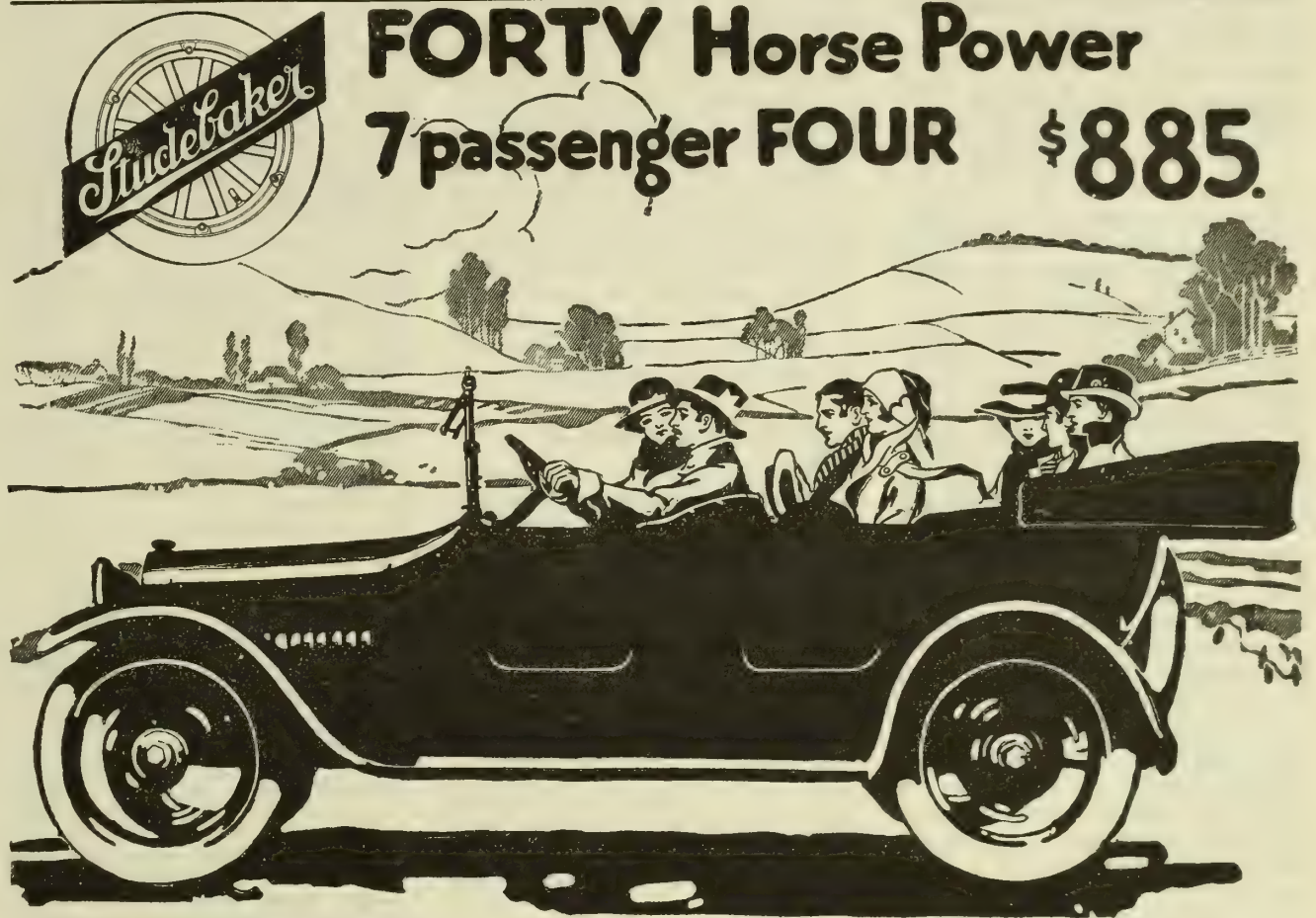
The location in the state is not a determining factor as to type of pruning so much as the matter of variety. We would suggest that the inquirer write the agricultural experiment station, Berkeley, and ask for Prof. Bioletti's bulletin on Vine Pruning in California. It is Number 24. Not so valuable but still of interest is Farmers' Bulletin 471, Grape Propagation, Pruning and Training, by Husmann, to be had if still in print by writing the United States department of agriculture, Washington, D. C.

Okra

Can okra be grown at Lindsay? Does it take much water? When and how is it planted? When does it ripen? Is there any market for it on this coast? Is it subject to pests? Is there any probability that a large

planting would be profitable?—Subscriber, Lindsay.

Yes, okra can be grown at Lindsay. Okra requires warm weather and as much water as corn. It is planted in the spring after all danger of frost is over—for safety this would be April 15. Plant sparsely in drills three to four feet apart. The young seed pods are what are used; these should be picked while they are still tender. The first of them should be ready to pick about the middle of August. The first frost will kill the plant. There is not a very extensive market here for okra; it is a Southern vegetable and its use is mostly restricted to persons of Southern tastes. It is but slightly troubled with aphids and mildew—but neither have yet been found bad enough to cause any alarm. Okra is grown here in half acre and acre patches where it is grown in the Southern states in ten-acre patches. It will stand shipments of a week's duration, so by putting out inquiries in cities within that distance one might develop quite a market.—D. F. R.



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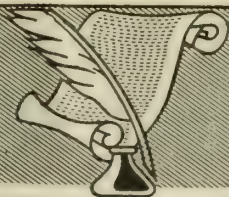
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of complaint must be sent us within 30
days from date of the transaction, and
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Cultivator when writing the advertiser.**OLIVE MEN ORGANIZE**The organization of olive grow-
ers which has been adding to its
membership for several months is
now getting down to definite action
and has secured the services of Mr.
J. P. Dargitz, formerly of the Cured
Fruit Association and later of the
Almond Growers Association. Mr.
Dargitz has fullest understanding of
marketing conditions. Now if the
olive growers will establish a brand
that is worth advertising and adver-
tise it to the limit this state will keep
itself busy supplying the demand for
California ripe olives.**DOLLAR SERIES**It is most gratifying to see the
demand which is being made on the
publishers for the Cultivator's dollar
series, "Poultry for Profit" by Mrs.
Koethen and "The Garden Beautiful"
by Mr. Brauntun. Almost everyone
who has occasion to buy these books
has remarked, "How can you do it for
one dollar?" Large book dealers who
have looked them over and learned
the price express the same astonish-
ment. No more pleasing holiday
present could be made than one of
these books. Orders may be sent at
any time for delivery on a certain day.**PEACH DAY**The peach men of California
are making a whirlwind finish to their
campaign for members for their mil-
lion dollar corporation. Next Satur-
day is to be dedicated to the work of
getting members in every peach
growing section of the state. The call
issued by the committee appears in
the deciduous department of this
issue. This organization is to be built
along the lines of the Associated
Raisin Company, and while entirely
separate it is expected that it willaffiliate in such a way as to benefit
both organizations. We hope the
membership secured will bring within
the control of the organization 100 per
cent of the peaches of California.**THANKSGIVING DAY**This is the day which the
president of the United States has set
aside for all to join "in praise and
thanksgiving to Almighty God for his
many blessings and mercies to us as
a nation."The extraordinary circumstances
of such a time have done much to
quicken our national consciousness
and deepen and confirm our con-
fidence in the principle of peace and
freedom by which we have always
sought to be guided. Out of darkness
and perplexities have come firmer
counsels of policy and clearer percep-
tions of the essential welfare of the
nation. We have prospered while
other people were at war, but our
prosperity has been vouchsafed us, we
believe, only that we might the bet-
ter perform the functions which war
rendered it impossible for them to
perform."California has sent to Europe of its
best fruits and other products which
have been appreciated in trench and
hospital, and in spite of many unsat-
isfactory conditions the producers of
our state are prospered. There is
occasion for thankfulness in Califor-
nia above all other sections.**MORE RURAL CREDITS**It seems to take an immense
amount of resolving to bring any
practical results in the matter of
rural credits. The past two or three
years we have all been writing and
talking and dreaming of a bettering
of conditions of the producers of the
land by somewhat lightening their
burdens in one particular at least. An
opportunity was given for a long step
in the right direction at the recent
special election and had the producers
of the state themselves come out and
voted the question would have been
settled. But the vote was exception-
ally light, showing that there is need
for more education.To that end another national con-
ference on marketing and farm
credits has been called to meet at the
Hotel Sherman in Chicago next Mon-
day. There will be several sessions
until the evening of Thursday. This
is the third of the great national con-
ventions called by the Associated
Farm Papers of which the California
Cultivator is a member. Some of the
brightest men of the country are to
be present to make addresses, and we
hope to give of these addresses in
later Cultivators.**THE FARMERS ARE COMING**There have been brought to the
state this year, principally because of
the expositions, several farmers' ex-
cursions by the Santa Fe Railway
Company. These farmers have an-
swered repeatedly and, so far as could
be noted, willingly the universal
"How do you like California?" and
the answers ranged all the way from
"It's great!" to "The best ever, and
some day we will be here to live."Most of these people came to South-
ern California first and were shown
the Panama-California Exposition, the
citrus and other producing sections,
later going through the San Joaquin
Valley where in Fresno and other
places they saw the raisin industry at
its best and how and where figs areproduced, the live stock industry, and
many other features of California
farming and later of course the big
exposition. Nearly all of these farm-
ers were wide awake, successful men.
They were not looking for locations,
but they were impressed with Califor-
nia's way of working. We think there
will be many additions to California's
population because of the things
shown to these farmers.**MARKETING COMMISSIONER**Governor Johnson has ap-
pointed Col. Harris Weinstock as
state marketing commissioner. A bet-
ter appointment could not have been
made. If any one in this state can
take the extremely small appropria-
tion made by the last legislature and
make any showing whatever it is
Harris Weinstock. If success is not
achieved it will not be because of lack
of earnest endeavor or efficiency. A
year's trial under such management
will enable the state to judge some-
thing as to the possibilities and lead,
we believe, to more satisfactory sup-
port by the next legislature. There
are many claiming that there is no
need for such a commission, but we
believe there is no place where the
plea to dispose of products at a living
price is heard so often as in the office
of a farm paper. No mail comes
without the request for information,
"How may I dispose of my product?"
Its production is comparatively easy;
its marketing seems an impossibil-
ity." If Mr. Weinstock does not show
us the royal road, he will at least
formulate some plan which will lead
toward more satisfactory marketing
conditions. We congratulate the gov-
ernor and the people on the appoint-
ment.Edgar A. Forbes, secretary of the
California Development Board, has
been appointed secretary of the state
commission of markets by Mr. Wein-
stock. Mr. Weinstock soon leaves for
the East to investigate as to market-
ing conditions.**PLANT NAVELS**California orchardists have se-
cured a reputation for imitating the
sheep, at least as to following the
leader. If the leader plant pumpkins,
we all plant pumpkins. Then when
the pumpkin market is depressed, we
all with one accord cease to plant
pumpkins. With an annual crop our
mistakes are soon corrected and
usually with such vigor that we rush
into the opposite mistake. With trees
that take years to come into bearing
we should use more reason and less
impulse. A few years ago we were all
planting navel oranges, later Valen-
cias, again Eureka lemons, another
time freestone peaches, then clings for
the canners wished them. On olives
we went to extremes for a short time.
The apricot, in fact, all other Califor-
nia fruits, have followed the same
course. At present we are looking
with disfavor on the orange, the lemon
and some other fruits—this because of
immediate market conditions, without
thought of the years it takes to cor-
rect these conditions.California orange groves, especially
those of the navel varieties, have not
made good the promise of long life
given earlier in the industry. The
seedling was known to live so many
years and bear profitably that it was
assumed the navel would do as well.
Perhaps it will once we learn its cul-
tural requirements, but at present the
growers are guessing as to whether
the navel will bear profitably for 20,
30 or 50 years. But few give it as
long life as 35 or 40 years. If this be
true, within the next ten years great
numbers of navel orange groves will
cease their heavy bearing and must
be replaced by younger and more vig-
orous trees. This will take time. With
the experience of the last quarter cen-
tury there should be fewer planting
mistakes in the next quarter. Prolific
strains only should be selected, the
best of care should be given them, and
above all only locations suited to
orange culture should be planted.An orchardist of wide experience re-
marked in this office only a few days
ago that ten years from today there
would be fewer Washington navel
oranges produced in California than
there are today. We hope he is
wrong, but urge orange growers to
open their eyes to conditions.**Agricultural Notes**Prices of olive oil are advancing in
Syria, particularly because the people
are using it for lighting instead of
petroleum.Chinese cattle are again allowed ad-
mission to the Philippines. For five
years they have been quarantined
against to exclude cattle diseases
prevalent in South Asia.California's onion acreage for 1915
was 8128. This was nearly 2000 less
than the acreage in 1914. The yield
was also more than 900,000 bushels
less. These figures are given out by
the bureau of crop estimates of the
United States department of agricul-
ture.The drouth in Australia has, it is
estimated, resulted in the loss of 30 to
40 per cent of the dairy cattle. Aus-
tralia in consequence will export no
cheese and very little butter. In the
fiscal year 1914-15 Australia exported
domestic butter to the value of
\$12,950,550.There will be a meeting of the
United States Live Stock Sanitary As-
sociation at Chicago, December 1-2.
State and interstate movement of live
stock and quarantine regulations will
be discussed. Particulars regarding
the meeting can be had from Secre-
tary John J. Ferguson, Union Stock
Yards, Chicago.With reference to the English hop
crop it is stated that in many of the
gardens in the counties of Worcester,
Hereford, Surrey, Hampshire, Kent
and Sussex the blight has mastered
the plant, and many of these gardens
will not have a hop picked in them. It
can be safely said that the crop will
not exceed half of that of last year.Russia this year imported \$1,000,-
000 worth of binding twine from this
country. It had to enter Russia
through the far northern port of
Archangel and came too late for most
of the harvest. The Russian wheat
crop is large, but cannot be exported
freely or even brought to ports for
shipment, since the army monopolizes
the railroads.Indiana assessors collect statistics
of silos in the state. This year 20,306
were reported, last year 14,441, and
two years ago 9978. The number re-
ported this year represents one silo
for every 10.8 farms in the state,
which compares with one silo for each
15.1 farms last year, and one silo for
each 21.7 farms two years ago. These
figures reflect the rapid growth of
silage in the United States.The present crops of pears and ap-
ples in Holland are the largest in
years. The orchards are a remarkable
spectacle. It is a literal fact that
pears and apples grow on the trees
nearly as thickly as currants on their
bushes. It would seem that prac-
tically every spring blossom has de-
veloped into a pear or an apple. The
limbs of the trees would break down
under their heavy burdens if they
were not supported by forked poles.
Growers are selling these fruits at less
than an American cent a pound.The department of agriculture has
issued Bulletin No. 315, giving results
of a study of the cantaloupe industry.
It is found that many receivers en-
courage the shipment of greater sup-
plies than they can sell promptly. At
Chicago in one day melons were on
the market from eight different states,
including Delaware and California. In
the study made by the department in
1914 statistics were gathered of 16,401
carloads of cantaloupes. In carload
shipments California was the greater
producer, shipping 5146 carloads.

Agricultural News Notes



of the Pacific Coast

Northern California

An orchardist at Oroville, Butte County, is preparing to plant an acreage to pecan trees.

Yuba City, Sutter County, claims the largest acreage of raisin vineyard controlled by one individual.

Sutter County's output of rice will be greatly increased; one planter is planning for 300 additional acres.

A large sale of rice is reported from Biggs at \$2.00 per 100 pounds. This is considered very satisfactory by the growers.

Some of the "poorest land in Glenn County" has been planted to rice and yielded this year in excess of 30 sacks per acre.

The great poultry show at the Panama-Pacific Exposition has brought together more than 8000 head of poultry.

Fruit growers of Tehama County recently met at Red Bluff and discussed forming an auxiliary to the California Dried Fruit Association.

The Shasta County Citrus Fruit Association has shipped its last car of cured fruit. The season's product aggregated 300 tons, principally prunes.

Butte County's horticultural commissioner, Earle Mills, is urging a more persistent fight against the Johnson grass, which is spreading through many parts of the county.

The upward tendency of the hop market on account of world's shortage is appreciated by all Northern California hop growers. Many growers are still holding last season's crop.

The California Wool Growers' Association recently held its annual meeting at the Hall of Congresses in the exposition grounds at San Francisco. Charles A. Kimble of Hanford is president.

County Horticultural Commissioner Harney of Yuba County is organizing a fight against the pest of yellow scale which has become established in some of the orchards around Marysville.

The butterfat producing contest among the members of the Butte County Cow Testing Association has started. A handsome silver loving cup will be presented to the owner of the cow producing the most butter fat for the 12 months ending October, 1916.

The exhibit of standard bred turkeys at the California state poultry show to be held in Sacramento, January 14 to 18, 1916, will be the largest and best ever brought together, according to the show committee of the Sacramento Poultry Association, under whose auspices the state show will be held.

Five representatives of the various grape interests, the raisin grape growers, the dry wine grape growers, the sweet wine grape growers, the table grape growers, and the growers of grapes of the entire state, will leave for Washington, D. C., at the end of this month to be on hand for the opening of congress next month and to make the fight of the state of California against the 55-cent brandy tax.

Central California

Fresno is shipping butter to Canada.

Stanislaus County is harvesting its heaviest bean crop.

The Travers section of Tulare County has caught the rice planting fever.

Globe, Tulare County, claims the record for earliest oranges shipped this year.

A large attendance was given to the State Fruit Growers' Convention last week in Visalia.

A solid trainload of Porterville beef left that station last Saturday for San Francisco.

Farm Adviser Conner of Stanislaus County is recommending farmers to use bean straw for stock feed.

The severe frost of early November did material damage to gardens and tender plants in many sections of the valley.

Black eye beans are selling at from \$3.00 to \$3.35 per hundred. The farmers are securing approximately \$3.25 for pinks.

Many points in the valley entertained the farmers on the Santa Fe special which passed through the valley last week.

Turlock cantaloupe growers are well satisfied with their receipts this season through their cooperative marketing association.

The great record made by the swine of Mr. Bassett of Hanford will give a great impetus to the swine industry of Kings County.

The citrus crop of Central California is "looking fine" and that section will have a prosperous season on both oranges and lemons.

At an enthusiastic meeting of peach growers at Armona recently liberal subscriptions were made to the new peach growers' association.

The Fresno chamber of commerce has made formal request of the board of regents of the state university to develop the Kearney estate.

The exhibit of tractors at the State Fruit Growers' Convention proved one of the most attractive features.

There were many losses of live stock in Fresno County from blackleg during the month of October. Inspector Longley says that the disease will probably be stamped out as the cold weather comes on.

The Tulare County Protective Association, which last year controlled 98 per cent of the citrus crop of the county, has this year decided to conform to the maturity standard imposed by the federal government.

Kings County dairymen recently received their cream checks for October, prices for A-grade cream running about 29 to 29½ cents and B-grade about 27 cents. Some sweet cream averaged as high as 34 cents.

Preparations are being made all over the valley for a great meeting of peach growers next Saturday in every peach growing section of California at which signatures will be secured for the new million dollar cooperative California Peach Growers' Association.

Southern California

The Orange County Fruit Exchange estimates the new crop at 2070 carloads.

Imperial Valley will hold its first agricultural assembly at Brawley, December 18.

The San Bernardino County Poultry Association will hold its next meeting December 2.

Saticoy, Ventura County, is shipping out from four to six carloads of lima beans per day.

The Anaheim sugar factory finished its run, which was begun in July, on November the 21st.

Four carloads of selected lima bean seed were sent out from Santa Paula last week for sale in Eastern centers.

The La Puente Walnut Growers' Association packing house expects to ship out about 620 tons of walnuts this season.

Orange County's sealer of weights and measures has taken to task produce men from Los Angeles because of short weights.

One Paso Robles almond grower recently hauled a load to market which weighed 6850 pounds, for which he received a check for \$822.

The fall flower show of the Redlands Horticultural and Improvement Society brought out the most wonderful display of chrysanthemums ever made in that city of flowers.

The route between Southern California and the great Central California Valley has been shortened more than 40 miles by the new Tejon Pass cut-off, a part of the state good roads system.

The walnut packing house at Puente, Los Angeles County, recently closed its season with 780 tons, or nearly 80 packed cars of nuts. The walnut market is in exceptionally good condition.

The last meeting of the Riverside County chamber of commerce was held at Elsinore last Friday. Enthusiasm prevailed as to the methods of upbuilding Riverside County and as to the quality of ducks served by the ladies of Elsinore.

The Southern California Arboricultural Convention, recently held in Redlands, decided to hold its meeting at Santa Ana. The new year's officers of the association are: President, C. W. Hickok, Riverside; secretary, W. B. Hadley, Redlands.

Those interested in the movement to locate a cannery in the Chino section of San Bernardino County at a recent meeting elected representatives from the Cucamonga, Collins, Ontario and Chino districts. These representatives will make plans for a permanent organization.

Rialto, San Bernardino County, will soon have one of the finest packing houses in the citrus belt. An orange packing house at Upland has installed a furnace for drying oranges that it is thought will dry the surface of the fresh fruit before shipping so as to give it a much better carrying character.

The Coast

Portland, Oregon, is holding a land products show.

The Oregon agricultural college at Corvallis now boasts a 301-egg hen.

Tombstone cattlemen are disposing of their yearlings on a basis of \$32.

The Weber County farm bureau of Utah has organized a number of new locals.

The Yuma Indians have planned an agricultural fair at Yuma November 25, 26 and 27.

Arizona alfalfa men are appealing to the governor to lift the embargo on Mexican cattle.

The city of Yuma has appointed milk inspectors who will pass on all milk sold in that city.

Finding light demand for alfalfa farmers of the Pecos Valley of New Mexico are buying feeding steers.

About 2000 head of cattle have been shipped from Holbrook, Arizona, to Denver during the past few weeks.

The agricultural college at Corvallis, Oregon, shipped a car load of Shropshire sheep to the Panama-Pacific exposition.

Farmers near Hood River, Oregon, are experimenting with the first crop of cotton yet brought to maturity in that state.

The Arizona state fair held at Phoenix last week brought out an exceptionally fine showing of live stock and general farm products.

Crook County, Oregon, recently held a potato show at Redmond. It was pronounced the best exhibit of potatoes ever shown in the state.

The Oregon Walnut Growers' Association recently met and elected J. C. Cooper of McMinnville, president, and H. V. Meade of Orenco, secretary.

A county farm bureau has just been organized in Beaver County, Utah. This is the second county in Utah to take advantage of its opportunities to secure a farm adviser.

The Western Walnut Association held its first meeting at Portland, Oregon, the first week in November. Growers were in attendance from Oregon, Washington and Idaho.

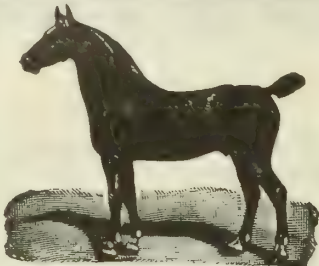
From 35 to 40 tons of apples at Hood River, Oregon, are now daily being made into vinegar and cider at the local plant. Growers receive six dollars a ton cash for their culls.

Shipments of stock into the Chandler district of Arizona have been delayed by the troubles across the line in Mexico. One stockman reports that 1500 head have just been captured by Villa's army.

The first Satsuma oranges of the season are being sent out from Texas. Satsuma shipments will continue for the next two or three weeks. About 100 cars will be marketed from the state this year.

The Pima Indian fair held at Sacaton, Arizona, the first week in November attracted a big crowd. The agricultural exhibits were not so good as last year's owing to the breaking of irrigation ditches which let the crops dry in the ground.

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prices—we pay registration fee.
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orders.

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by vaccinating them
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Live Stock and Dairy**A WONDERFUL STOCK JUDGING
DEMONSTRATION**

Written for the California Cultivator
By W. S. Guilford



NE of the objects of all fairs
and expositions is education,
and D. O. Lively, chief of
the live stock show at the
Panama-Pacific International
Exposition, planned to make this
world's show the greatest educational
affair of its kind ever held in the
world.

At the close of the judging of the
Berkshire classes Judge F. A. Scott
conducted a judging demonstration,
discussing several of the prize win-
ners in detail and answering many
questions. It was one of the most
valuable lessons in stock judging and
breeding that has ever been delivered
in a show ring in America or any-
where else, and Judge Scott is to be
congratulated not only for his com-
plete knowledge of all the points of
the breed, but for the clear and com-
prehensive manner in which he is
able to convey this information to
his audience.

Grand Leader 2d, the grand cham-
pion Berkshire boar, owned by A. B.
Humphrey of Mayhews was driven in
the ring, and Judge Scott said:

"Beginning at the head of this ani-
mal you will note that he has an ideal
Berkshire head—it is broad, the ears
are upright and the dish is right. I
mean by this that the mouth is set
on a line parallel with the general line
of the body, it is not too dished so
that the mouth sticks up in the air
as has been the case with some Berk-
shires, but is a good, practical mouth
that he can eat with comfortably. He
has a bright, clear, intelligent eye.

"It is a strong, masculine head, in-
dicating his sex in an unmistakable
manner, and it is set on a short, thick,
boar's neck, which blends well into a
shoulder that is a smooth one for a
vigorous boar such as he is. A boar
should not have a shoulder that is too
wide and prominent; it should be even
with the side of the body from end to
end or conform very nearly to this
line, but a boar's shield was put there
by nature for protection, and genera-
tions of breeding have not entirely
done away with it. I like to see a
shield drop away straight from the
top line and not bulge out too much.
When a shield springs out too widely
it is too prominent and the animal is
apt to be too coarse. The shoulder
must be smooth and wide on top.
This hog has a good shoulder.

"Right back of the shoulder is what
is known as the heart girth, around
that part of the anatomy in which
the heart and lungs are found, and
here Grand Leader 2d is exceptionally
strong. This is a point that all
breeders of pure bred animals must
give particular attention because it
will be noted that a large percent of
all animals are somewhat slack in this
point.

"The bottom of the chest should be
broad so that the legs set squarely
under the 'corners' of the animal.

"I want to call particular attention
to the heavy bone of good quality that
this boar has, and to his pasterns and
feet. He is right up on his toes and
carries his weight easily. A great
many hogs have weak pasterns.

"This hog has a wide back and loin,
the ribs are widely sprung and there
is a thick even covering of flesh. The
back is nicely arched with no ten-
dency to sagging or weakness and he
has a straight bottom line.

"The rump is wide and carries
evenly out to the tail, and the tail is
well set up. Some Berkshires have a
drooping rump, making the strength
of this animal in this point especially
to be commended.

"He has a full, deep, well rounded
ham and it is carried well down to
the hock. His testicles are set at the
right place—I do not like to see them
too high—that conformation does not
generally accompany a deep ham—

neither do I want them to hang too
low.

"The hind legs are set squarely
under the body and, like his front
ones, are strong. His rear pasterns
are upright as they should be.

"There are three measurements of
a hog that are just about equal on an
ideal animal; the length of the top
line from between the ears to the root
of the tail; the measurement around
the heart girth, just behind the
shoulders, and the measurement
around the body at the loin and rear
flank."

A rope was produced and it was
found that the measurement of the
heart girth was about five inches
greater than the length of the top
line, and the rear girth about three
inches greater than the top line
length, showing a remarkable and
unusual strength of heart girth. Con-
tinuing, Judge Scott said:

"These are very satisfactory mea-
surements. Frequently the length of
the body is much greater than the
girth measurements. A compact boar
like this makes a good 'nick' with
long-bodied, roomy sows.

"This is a very symmetrical animal
and I consider him one of the great
boars of the breed."

Following this a number of the
pigs sired by Grand Leader 2d were
driven in the ring. He sired the two
pens of four sons each that were
placed first and second in the "get of
sire" class; the junior and reserve
grand champion boar Star Leader
bought by the University of Califor-
nia; and the great boar pig Grand
Leader 6th, owned by Butte City
ranch and considered by many good
judges to be one of the most promis-
ing young animals in America.

"The real test of any breeding boar
is the kind of offspring he produces,"
said Judge Scott, "and here are a lot
of animals that are superior individu-
als, as 'like as peas' and a wonderful
demonstration of the ability of a
great individual to reproduce himself.
There are many boars that have the
good points themselves that are not
able to transmit them—so that he has
two claims to fame: superiority as an
individual and remarkable ability as
a breeder."

Over 100 interested people attended
the demonstration, but the amphithe-
ater should have been packed.

**THE WESTERN BERKSHIRE
CONGRESS**

Written for the California Cultivator
By W. S. Guilford

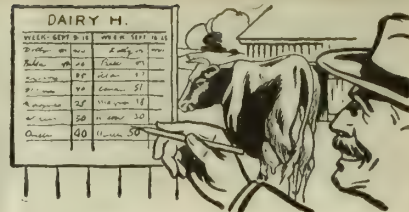
After the banquet given by the
American Berkshire Association to
breeders of Berkshires and others in-
terested in the improvement of hogs
at the Inside Inn on the Panama-Pa-
cific International Exposition grounds
November 5, 1915, the "Western
Berkshire Congress" was organized.

This is one of the most important
things that has ever happened in live
stock circles in the West.

The Western Berkshire Congress
will work with the American Berk-
shire Congress and the American
Berkshire Association, but will have
for its object the upbuilding of the
Berkshire business in the West.

The American Berkshire Congress
through its meetings and sales has
been the means of bringing breeders
closer together, harmonizing interests,
educating breeders and hog men as
to the best sort of hog and the best
to be attained in Berkshire perfection,
and generally advancing the Berk-
shire business in a very remarkable
way in the Middle West, the East and
the South.

The American Berkshire Congress
was started as a "get-together" affair
by a half dozen breeders who were
visiting N. H. Gentry at Sedalia, Mis-
souri, and who realized that by meet-
ing with each other and exchanging
ideas much good would result. Now
the annual meeting is a big affair with
a program made up of addresses and

**A Jump in Her Record**

Most every herd has one or more cows
that seem sluggish and low in yield
without any apparent reason. In many
cases this may be due to some vital or-
gan becoming overworked. Proper treat-
ment is needed to build up the system
and fortify the cow against serious
disease.

If you have such a cow, buy a pack-
age of Kow-Kure from your feed dealer
or druggist and use according to direc-
tions. You'll be surprised at the differ-
ence it makes in her general health and
milk yield. Kow-Kure is especially
recommended as a preventive and cure
for Abortion, Barrenness, Milk Fever,
Scouring, Lost Appetite, Bunches and
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Young Stock For Sale
M. BASSETT Hanford, Cal.

discussions on subjects of vital interest to the breed and industry, a banquet, a big show of Berkshires at which the best of the breed compete for prizes, and a sale.

The congress has a set of officers separate from the American Berkshire Association which handles the registry of the animals of the breed, but the congress is given all possible support and encouragement by the record association.

Because of the great distance between the Middle West and the states of the Pacific Coast and intermountain region, it was agreed by those officers of the American congress, and the registry association who were present at the banquet and meeting at the Inside Inn that the best interests of the breed and of the breeders in the West would be served by a separate organization out here. They pledged all manner of hearty cooperation and such financial support as could be given.

Unquestionably the best man in the West was chosen for president of the Western Berkshire Congress, J. J. Thatcher of Thatcher, Ennis & Williamson, Riverside. Mr. Thatcher has been president of the American congress and has been prominently identified with the affairs of the breed for a number of years. He is full of energy and enthusiasm and "knows how."

C. M. Talmage, Newport, Washington, a prominent and progressive breeder of the Northwest, was made vice-president, and F. R. Steel, of Grants Pass, Oregon, another "live wire" was made secretary-treasurer.

The members of the board of directors were appointed by the president and are: W. M. Carruthers, San Francisco; A. B. Humphreys, Mayhews; S. B. Wright, Santa Rosa; Jos. Wilson Jr., Mason, Nevada, and J. M. McCain, of Utah.

Nearly 100 breeders have already joined the congress and everyone breeding Berkshires or interested in the breed should get in touch with some of the officers and find out what can be done to help along the good cause.

There is room for more good Berkshires everywhere in the West and a great service is accomplished for agriculture and in the best interests of the whole community whenever anything is done to bring about this result.

THE CALIFORNIA SWINE BREEDERS' CONSIGNMENT SALE

Written for the California Cultivator
By W. S. Guilford

The breeders of pure bred swine in California owe it to themselves and to the business to make the consignment sale of the California Swine Breeders' Association, to be held in Sacramento January 27, 1916, the big success that it deserves to be.

Every breeder who is not now a member of this organization should send the membership fee of \$1 at once to Secretary J. I. Thompson, Davis.

The sale is to be preceded on January 26 by a big meeting during the day and a banquet at night, and it should be an event of great importance to the whole industry.

Sacramento promises to become a great purebred live stock sale center; one of the best sales of the Holstein breed was held there recently and more are scheduled.

Live stock authorities from the Middle West who were in attendance at the Panama-Pacific International Exposition shows were most emphatic in their statements to the effect that there is no better way to bring about general distribution of registered animals than through well advertised public sales. These statements are based on many years of experience, and we can certainly do no better than to profit by it.

Instances are cited where men have been breeding registered animals in a community for years with practically no local demand for their stock, but when animals are sold at auction either at home or in a consignment sale elsewhere their neighbors frequently become good buyers. It is difficult to explain why this should be so; it just "happens" that way.

It is very important that none but

good animals be consigned to public sales. Even if there is a demand such that inferior animals will sell, the breeder who offers them does himself a great injustice in so doing, as well as working an injury to the breed and to the industry.

DAIRY FARMING IN SAN BENITO COUNTY TAKES ANOTHER STEP FORWARD

Written for California Cultivator
By J. H. Jacobsen, Dairy Barn Expert

In San Benito County is to be found one of our most progressive farmers. Developing his 1900 acres of rich soil with intent of avoiding any waste, making every particle of crop enhance the treasury, we find Mr. J. Lansing Lane of Hudner erecting a model sanitary dairy barn for his herd of 60 fine Holsteins, all heavy producers.

In deciding just what was needed for the comforts of his herd, Mr. Lane had his plans carefully reviewed by a dairy barn expert. Every feature that would tend to benefit the cow, furnish perfect sanitation and ventilation and lessen the labors of employes has therefore been incorporated in the plans and specifications. Aside from this building, Mr. Lane has already built a large storage barn and five silos to care for the large crop of sorghum or corn specially grown for his use on the farm. He believes that the best treatment of the herd is none too good for the animal upon whom he depends for pure milk rich in butter fats.

Inasmuch as the sanitary arrangement and condition of barn play an important part in combating the development of bacteria in the milk, a description of this barn will be of interest.

The building is 125 feet long by 40 feet wide, with peaked roof and a height of 19 feet. Along the peak are located five ventilators, 20 feet long.

Concrete foundation walls extend up five feet from the ground line and are finished smooth with cement plaster. Both sides of this barn, just under the eaves, are open and screened, thus insuring perfect ventilation and protection from flies. With cement stall floors, back of which are gutters, a more cleanly condition could not exist, for the building will be washed down after every milking, even the cow will receive her bath upon entering her place in the barn. Feeding mangers of smooth concrete have also been provided and are so constructed that they can be cleaned and washed after each feeding. Every comfort for the cow while feeding has been provided. Sanitary tubular steel stalls with flexible tubular stanchions are being installed, also an overhead trackage system for handling feed from silos to mangers and removal of litter from barn.

Mr. Lane is to be complimented as a student of scientific methods in agriculture for his efforts to produce pure milk under the most sanitary conditions which insure to consumers of his product a rich milk and the very best butter obtainable.

ERGOT

Ergot is a name applied to one stage of a fungus that works in the heads of a number of grasses. It causes one of the oldest known stock diseases, the so-called "ergotism."

Ergot is abundant in some localities at this season. It forms purple-black, straight or horn-like, hard structures about one-fourth to one-half inch long. These structures occupy the position of the grain in the head of grass. This hard mass is not a degenerate kernel of grass, however. The black ergot masses vary in size and shape, depending upon the plant attached. They are largest in rye. Ergot develops upon a number of grasses, chief of which are cultivated rye, wild rye, wheat-grass, meadow-grass, timothy and red-top.

There is no effective remedy for ergotism. Hence, one should become familiar with the appearance of ergot, and avoid grazing stock on badly infested areas and also avoid cutting infested areas of grasses for hay.—W. W. Robbins, Colorado Agricultural College, Fort Collins, Colorado.

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Redwood

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Our tanks are built to exact measurement by the most skilled mechanics.

THEY ARE GUARANTEED ACCURATE IN EVERY PARTICULAR.

Built for All Purposes

They are cheaper than metal tanks and outlast several of them.

WE ALSO BUILD TANK TOWERS.

Remco Redwood Pipe

Is scientifically designed and perfect in manufacture. The smooth interior gives greater carrying capacity.

Design and workmanship give strength.

Redwood gives length of life.

Suitable for Irrigation, Power, Water Supply and Drainage or Sewage Disposal.

Redwood Manufacturers Company

1604 Hobart Building, San Francisco

Auction

1700 Head of Hogs

At our ranch, 6 miles west of Covina and 3 miles east of

El Monte

At Durbin Station. Covina electric cars pass with 300 feet of ranch.

Tuesday, November 30th at 10 A. M. Sharp

The owners are retiring from the hog raising business and have instructed us to dispose of their entire fine herd, including a general stock of hogs composed of weaners, feeders, gilts, bred and unbred; sows, bred and unbred; sows with litter, etc.

Twenty-five pure bred Duroc-Jersey boars, 400 weaners 3 months old, 100 sows pigs 3 months old, 50 gilts 5 months old, 75 gilts 6 months old, 65 gilts 7 months old, 200 gilts 9 months old, 175 gilts 10 months old and 125 gilts 12 months old; 60 feeders, wt. 180 lbs.; 70 feeders, wt. 200 lbs; 25 sows due to farrow in 1 month, 135 sows due to farrow in 2 months and 160 sows due to farrow in 3 months; 53 sows with litters. The breeds are Durocs and Poland Chinas.

NOTE—All hogs included in this sale are guaranteed IMMUNE TO CHOLERA, having attained their immunity either through exposure or by the serum-simultaneous method of vaccination.

Also the entire equipment of horses, harness, wagons, dump carts, portable hog sheds, portable hog fencing, several thousand feet of good lumber costing as high as \$23 per M, same can be taken up without splitting; troughs with float valves, pipe, barns, California houses, farming implements.

Buyers in the market for high class, young, clean stock cannot afford to miss this

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Veterinary Queries

Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Sows Not Breeding

On my ranch I have 25 old sows and 60 others about 15 months old. None of them are breeding to suit me. All of the young sows should have had pigs by the time they were one year old, but now only 12 have farrowed and only about half of the rest are with pig. What is the trouble? We have four boars large enough for service which we give turns of a week or ten days each running with the sows. All are in fine condition, having been fed grain and alfalfa until two months ago when we cut out the grain, but with no apparent results. The hogs are pure bred Duroc with some registered Mulefoot ones for trial. Please state what can be done to increase the number of pigs.—Subscriber, Arizona.

We do not think that hogs are as prolific here in this arid country as they are in the East where they get more corn, also that you are not handling your boars right. With so many sows you should not turn the boar in

and let him exhaust himself on two or three sows, but only let him serve each sow once or twice and then separate them, only letting each boar have one or two sows a day. The boars should be kept in small pastures by themselves and the sows taken to them for only a short time, one each morning and evening. When the sows come in heat they should be separated from the rest and turned into a separate lot. Then after four or five days when the swelling about the vulva is about gone let the boar serve them once or twice and turn them back with the rest. In that way if there are several to be served in one day they can be divided between the boars. This will require some extra care but the increase will probably be worth the time spent. A little tincture of iron or sulphate of iron in the feed would also help matters some. Of the tincture of iron give an ounce to every ten hogs and repeat it every few days for a month. Or if you prefer the sulphate of iron give an ounce of the powder the same as that amount of the tincture.

Disinfecting Bull

Please give directions for disinfecting a bull after having bred cows affected with contagious abortion.—Subscriber, San Diego.

Clip off the hair from the belly and especially the long hair about the sheath, then wash the parts clipped with warm water and zenoleum, a pint of the zenoleum to a bucket of water. Also inject into the sheath with a continuous-flow syringe a solution of bichloride of mercury; one to the thousand. You can get the antiseptic tablets of your druggist and they are made so that one in a pint of water makes the right strength. You should use at least a gallon of the solution in washing out the sheath. The work should be done thoroughly, and to make sure of reaching all infection it should be repeated two or three times, a day or two apart. At the same time clean out the litter from the bull's stall and disinfect that with the zenoleum solution.

Caked Udder

I have had several cows with caked udders, the swelling lasting for a day or longer and then going away. Have been unable to ascertain any cause for it. Could it be an epidemic?—Subscriber, San Diego.

Probably due to an overloaded system. Use the old remedy that is recommended by all, a pound of epsom salts and a half pound of common salt dissolved in two quarts of hot water and when cool give at one dose as a drench. Or mix twice the amount of the above remedies for each cow and give a handful in the feed once a day while it lasts.

Milk Fever

About a month ago my cow came fresh. Within three hours she went
Continued on Page 522



Poultry for Profit

THE PANAMA-PACIFIC POULTRY SHOW

Written for California Cultivator
By M. C. Holman



ALL of the live stock exhibits at the exposition have brought together a very select showing of high bred animals and have instilled

into the minds of Californians the importance of raising something on the farm that will eat the produce and return goodly profit to the owner. It is better to drive or crate the produce to market in the shape of flesh, be it pork, mutton, beef or poultry, than to sack it up and sell it for little more than its costs to produce.

It is no new thing to say that California should produce more poultry. With the resources of this great state at the service of the poultryman there is no reason why much more land cannot be given to poultry and still add large sections for the raising of other live stock. We import thousands of pounds of poultry and thousands of dozens of eggs, all of which could be raised in California. Instead of importing we should export poultry and eggs. We should send them to the frozen East and the time is probably not far distant when we will be able to reverse the shipping instructions.

It is shows like that given at the exposition which stir up the ambition of poultrymen to raise better poultry and more of it. The cream of all the country far and near found their wire cages waiting them and there was no difficulty in placing the birds in their proper berths. So complete had been the arrangements that each exhibitor knew exactly where his birds were to show. We mention this feature as illustrating the part that system plays in every poultry movement, whether it be for the back yard raiser of a single dozen or the commercial man who specializes on quantity. It is all the same. Without system there is a loss entailed; with system there is the saving that makes the profits.

The exposition poultry show was the largest ever held on the coast and one of the largest in the world. We do not remember anything to equal it either in the number of birds or the quality displayed. In order to give our readers some idea of the magnitude of the undertaking let us present a few statistics. In all there were 7725 birds divided as follows: Single, in pens, 3252; two or more in pens, 1550; in display pens, but not for prizes, 276; bantams, 345; pigeons, 1618; turkeys, 168; geese, 90; ducks, 226; game farm exhibit, 200.

As one of the judges remarked "This show will stand for a long time without a rival either in size or quality". It is an unquestioned delight to look upon the pick of poultrydom, and at that show one could do it to his utmost satisfaction, for the cream of the East was cast with the cream of the West into the melting pot of critical examination and the best bird won, regardless of his nativity.

To judge this great collection of feathered blue blood required the services of 26 students of the Standard of Perfection. Five were from

California, two from Canada and the others from the Eastern states. And they were well occupied for the task required the action of gray matter to a greater extent than is usual in the ordinary poultry show. The birds had been selected by men who knew something of points, and the judges were merely to select from the selected.

The various breeds were particularly well represented and by almost standard models. The Plymouth Rocks alone numbered 525 pens, more than the entire number in some of our largest shows on the coast. Of course there was the regular showing of Barred Rocks, White Rocks, Buff Rocks, Silver Penciled, Partridge and Columbia Rocks. But there was also the Pyle Plymouth Rocks. These birds have brown markings on the back, with the lower part of the body a grayish white. The Blue Plymouth Rocks are solid blue in the hens, while the cock birds have a black coat on their backs over a solid blue.

The Wyandotte class was represented by 306 pens. Included in these were the Silver, Golden, White, Buff, Black, Partridge, Silver Penciled, Columbian, Blue and Spangled. The latter two are rather rare and very seldom shown outside of private exhibitions. The Wyandotte is unquestionably a classy bird and should become extremely popular. With a good carriage, firm body and good laying qualities it is one of the standard utility birds.

The Rhode Island Whites and Reds occupied 328 pens. This showing brought out the strongest type of this bird we have ever seen and the contest for prizes was particularly keen. The Rhode Islander, whether white or red, is not to be denied his full share of popularity, for it is a sturdy bird, of good proportions and a heavy layer.

The Light and Dark Brahmas required 106 pens. This is an unusually large number for this heavy type and our former shows have been satisfied to present a dozen pens of this breed.

To give our readers an idea of the magnitude of this exhibit we present herewith a list of the entries with the number of pens of each one. You can form your own opinions as to the quality of the birds that finally showed up as winners in this great array.

Cochins, 22 pens; Black and White Langshans, 66 pens; Minorcas, 183 pens; Leghorns, 462 pens; Black Minorcas, 13 pens; White Faced Black Spanish, 34 pens; Blue Adalusians, 44 pens; Single Comb Anconas, 76 pens, Orpingtons, 370 pens; Cornish, 75 pens; Campines, 117 pens; and a great number of miscellaneous breeds.

A special feature of this show was the great number of rare breeds, the kind not often seen in shows and particularly in the West. A few names will give an idea of the varieties: Bearded Golden Polish, non-bearded Silver Polish, La Fleche, Crevecoeur, Salmon Faverole, Sultan, Frizzle, Black Rhineland, Missouri White Fluff. There were many other rare breeds, but this list will suffice to give an idea of variety. Many of the specials are well enough for the fancier, but they have no place in the practical poultry yard.

List of awards not received in time because of going to press on account of the Thanksgiving holiday. It will be given next week.

20 Shorthorn Bulls

All registered and tuberculin tested. Age 10 to 36 months old. Every one a splendid individual, carrying the blood of such noted sires as White Hall Sultan 163573, Gladstone 239313, Royal Cumberland 316722. Correspondence solicited, inspection invited.

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Modesto, Cal.

"SPEEDING UP" THE PULLETS

Written for California Cultivator
By Jean A. Koethen



GILROY subscriber sends us a clipping from an Eastern paper with this request: "Would like to have your opinion in regard to that item. I always thought that pullets ought to have plenty of litter to scratch in and plenty of green."

The clipping reads: "Speed up the pullets that are not getting red in the face and showing proper comb growth. A wet mash is recommended for this purpose, fed early in the morning, all they will clean up in 20 minutes. Another good plan is to cut out all grain except a little at night, keeping them constantly at the feed hoppers of dry mash all day. Shorten the range and do not overfeed green stuff."

I have no idea what paper this came from nor who was the writer, but I venture to say that whoever wrote it wrote without duly considering just what is involved in that expression, "speed up." "Speeding up" usually means making up for lost time, whether the speeder be a horse, an automobile or a chicken, or at least getting ahead of the calendar. It can be done, in the case of a horse or an automobile, though at the expense of some strain which will be paid for later. In the case of a pullet, it might perhaps be possible to get eggs a little sooner by some such forcing method—I am not at all sure that it is even possible, but we will assume for the sake of argument that it is—but it would certainly be at the sacrifice of the future usefulness of the pullet.

If the pullet were merely an egg machine, it might be possible by pouring a little more egg material into her to produce a finished product, but she is not a machine. She is a living, moving creature, and it is absolutely essential that she reach maturity before she begins to lay. Egg laying is reproduction, and a hen is not fit for reproduction till she is mature. The reddening of the face and growing of the comb are accompanied by the development of the egg organs, and delay in showing these outward signs of maturity merely indicates that there has been a check somewhere in the growth of the bird. It may have been because of chilly, wet weather, or on account of fright or from frequent moving from coop to coop or lack of sufficient and suitable food, but there has been some sort of check, and trying to speed up at the last by feeding forcing mash is futile.

Laying should not begin till growth ceases. Robinson says: "Normally, laying begins at maturity, but occasionally immature birds, especially of the smaller and more precocious breeds, produce a few small eggs. The premature activity of the reproductive organs almost invariably results in stunted growth and the postponement of the beginning of mature, regular laying. Premature laying, though of no advantage, is often considered by the poultry keeper an indication of reproductive vigor and future heavy laying, and so gives him little concern; retarded laying is a matter for serious consideration."

The causes of retarded laying, Mr. Robinson explicitly avers, do not include lack of proper food, for there must be activity of the reproductive organs before the food can be turned into eggs. "A common fallacy, now generally discarded by students of the subject, makes activity of the reproductive organs dependent for its beginning as well as for continuance upon a surplus of food of proper composition. That this view is erroneous is evident when, with opportunity to eat all that they wish, hens that are not laying eat lightly and keep fat on a light ration, and when, as the hens begin to lay, the amount of food consumed is greatly increased."

Before she can produce eggs a pullet must be provided with all the food she needs for the maintenance of her bodily strength and heat. When she has had all this, and is vigorous and comfortable, she must still have a sufficient surplus of nourishment to provide material for eggs. What will she do if she is provided with merely egg-material and left without provision for her own maintenance? Wouldn't that be like trying to run a factory without providing for the wages of the workers or for the

mechanical power to keep the wheels moving?

This is precisely what the above clipping suggests. Give the pullet the dry mash that provides egg materials, though her undeveloped comb indicates that she has as yet no power to

POULTRY SHOWS

Pasadena, Pasadena Bantam Show, Dec. 1-4, 1915, H. J. Lowdermilk, 138 West Dakota Street, Pasadena, secretary.

Long Beach, Long Beach Poultry Association, Dec. 2-6, 1915, R. C. Kellogg, Long Beach, secretary.

Pasadena, Pasadena Poultry Association, Dec. 1, 1915, M. D. Cartwright, 1719 Morton Avenue, Pasadena, secretary.

Modesto, Stanislaus County Poultry Association, Dec. 1-3, 1915, J. D. Yates, Modesto, secretary.

Porterville, Porterville Poultry Association, Dec. 9-12, 1915, B. R. Nofziger, Porterville, secretary.

Spokane, Wash., Inland Empire Poultry Association, Dec. 14-18, 1915, Mrs. H. A. Klusman, secretary.

Tucson, Arizona, State Poultry Association, Tucson, December 17-18.

Tacoma, Wash., Tacoma Poultry Association, Dec. 28, 1915, Jan. 1, 1916, W. Shepherd, Sumner, Wash., secretary.

Santa Ana, Orange County Bantam and Aviary Club, third annual show, Dec. 28-31, 1915.

Los Angeles, Los Angeles Poultry Association, Jan. 5-11, 1916, Walter M. Ross, 224 Colorado Boulevard, Glendale, secretary.

Ontario-Upland Pigeon and Poultry Association, Ontario, San Bernardino County, January 27-29, 1916.

Seattle, Wash., King County Poultry Association, Jan. 10-15, 1916, C. W. Melville, 473 Colman Building, Seattle, secretary.

Sacramento, California State Poultry Association, Jan. 14-18, 1916, C. A. Wilkins, P. O. Box 1117, Sacramento, secretary.

make eggs, and keep from her the good hard grain and greens that she needs for maintaining health. Would not that be shortsighted?

The first principle of pullet growing is that the pullet shall not be required or even permitted to lay till she is fully grown. The second is that she be kept growing without the slightest check from shell to laying house. A single day's illness, lack of exercise, neglect, annoyance by insect pests, overcrowding, lack of a properly balanced ration, may, any one of them, retard laying maturity for a month or more. If you want to "speed up" you must do it from the beginning.

After the pullet shows by her comb and her size that she is ready to lay, she may be assisted in several ways. The hot morning mash, savory with vegetables, with tempting bits of green sticking out, is one of the best. A little chopped chili pepper in this occasionally does no harm, but the ration must not be too stimulating. Mustard and mustard flour are also recommended, but like the pepper they must not be overdone. A mash moistened with clabbered milk is one of the best egg foods and is fed regularly in the afternoon at the Missouri laying contests. There is nothing better than a good feed of green cut bone twice a week if it can be had fresh. Any of these things, after she is ready to lay, will help her to begin, but she must be ready first. That is the important thing.

What shall be the regular ration of the pullet that is kept for egg production? The United States department of agriculture has been undertaking a series of experiments to determine just what feeds fowls prefer and how much of each kind of feed they eat when they are supplied with a variety, and has concluded that "Hens should be permitted to balance their diet themselves. If given equal quantities of various feeds they wisely will select their rations according to the

formula: Corn meal, 63 per cent; beef scrap, 20 per cent; bran and middlings, 17 per cent."

A good many expert poultrymen are coming to agree with this decision of the department, but they also agree that it is not easy or usually practicable to keep all needed kinds of feed before the hens in hoppers. It is not difficult, however, to keep oyster shell and beef scrap in hoppers by themselves, letting the birds help themselves as they will, and to mix the bran, middlings, cornmeal and other ingredients in a mash from which they will pick what they may. Whole grain should be at least half the ration at the start but the proportion of dry mash may be increased as the pullets settle down for the winter's work.

BREEDING FROM GOOD LAYERS

Half an egg a day is the average to which every industrious and self-respecting hen ought to attain, according to the University of California. Trap nests are the means recommended for hastening the coming of the golden age when the "boarder hen" shall be exterminated and every hen shall average at least 180 eggs per annum.

This homemade trap nest closes when a hen enters to lay an egg. Thus accurate record can be kept of the production of individual hens. Hence the poultry raiser can incubate only eggs from hens with a high record as egg producers, mated with well grown, sturdy roosters whose mothers were naturally prolific layers. The result of such selection on sound eugenic principles is rapid improvement of the natural laying capacity of the flock. The trap nest makes it easy also to discover and eliminate the hen which does not earn her own keep.

How every poultry grower may cheaply and easily with his own hammer and saw make trap nests for his poultry yards is told by J. E. Dougherty and W. E. Lloyd at the university farm, in a publication on "Practical and Inexpensive Poultry Appliances" just issued, obtainable free by writing to the college of agriculture at Berkeley.

Other useful home made poultry devices are described also, such as dry mash hoppers which will prevent waste of chicken feed, self feeding grit or shell hoppers, mash hoppers especially for chicks, catching coops for transferring large numbers of chickens from pen to pen, devices to be used in killing and dry picking fowls, crates in which birds are fattened for the market, supply cans to be filled once a week, to save labor at recurring feedings and to aid in keeping records of the feed consumption per pen or per flock; a cabinet in which 2000 eggs (being saved for the incubator) can be turned daily simply by revolving the table on its axle, devices for marketing eggs and chickens in working toward improvement of the heredity of the flock, and an electric candler for candling market eggs or testing hatching eggs during incubation.

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 that are fit to head any herd anywhere.
 Visitors say they are the best they have
 seen. They have the large size, the good
 hams and shoulders, the strong arched
 backs, great length and depth of body,
 plenty of smoothness, mellowness and
 quality—in fact, they have two good ends
 and a good middle, are good lookers and
 money makers. Their dams are either
 from Illinois, Iowa or Missouri, or they
 are from dams whose sire or dam are
 from these states. These boars are sired
 by Iowa Wonder who will weigh over
 1000 pounds in show condition. He is a
 son of A WONDER, the greatest Poland
 China boar living or dead. These young
 boars carry the stamp of their sire and
 will sire pigs that will please you. Satis-
 faction guaranteed in every particular. I
 am overstocked. I have boars galore. I
 will sell them at extremely low bargain
 prices. No females for sale at present.
 The book on "THE HOG SUPREME—
 THE POLAND CHINA" will be sent to
 you free for the asking.

Yours for the BIG TYPE—the kind that
 grow faster and larger and have more
 pigs. Geo. A. Smith, Corcoran, Cal.

Billiken Herd—Pure bred, pedigreed O. I.
 C. Swine; the big white kind. Ready
 for immediate shipment; weaned pigs of
 both sexes; pairs and trios; mated not
 akin. All these pigs are from big type
 stock, of extra heavy bone; weight, with
 early maturing quality. Immunized
 against hog cholera; crated and registered
 free. Write for descriptive circular and
 price list. C. B. Cunningham, Mills, Sac-
 ramento County, California.

For Sale—Duroc Jersey Gilts; the dams
 of these gilts were sired by such noted
 boars as Nebraska Sensation, Cal. Chief,
 Top Notch King. He by Modesto King
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 Sold for \$5000, and has more high priced
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Fine Registered Percheron Stallion from
 the very finest imported prize winning
 stock in California. Color, dapple coal
 black with star; 22 months old; weight
 1500 lbs.; height 16 hands. Very gentle,
 broke, sound and perfect. Will make one
 of the best stallions in the country. Will
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 112 Howard St., Glendale, Cal.

Registered Poland Chinas—Large type.
 Dam sired by 1000-lb. Grand Champion
 Idaho; service boars, open or bred gilts
 and young stock, sired by son 1st prize
 winner Wisconsin 1914 and Grand
 Champion P. P. I. E. 1915 Exposition.
 Prices reasonable. Satisfaction guaran-
 teed. A. J. Robinson, Route A, Box 275,
 Modesto, Cal.

Del Dayo Farm (Old Haggin Bottom
 Ranch) Registered Berkshires, both
 sexes and from weanlings to one year
 old. Now ready a few choice Gilts safe
 in pig and some very choice 10 mos. old
 Boars and every sale absolutely guaran-
 teed satisfaction. Stephen S. Day, Sac-
 ramento, Cal.

Grape Wild Farm Thoroughbreds—Guern-
 sey Bulls of A. R. Breeding, BERK-
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 All ages for sale. A. B. Humphrey, pro-
 prietor, Mayhews, Sacramento Co., Cali-
 fornia.

65 Head Registered Poland China Hogs
 for sale; all sizes, both sexes. None bet-
 ter anywhere. Large and medium type.
 \$20.00 and up. We will please you or re-
 fund your money. W. A. Young, Lodi,
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Blue Ribbon Herd Duroc-Jersey Hogs,
 service Boars and Bred Gilts a special-
 ty; also boar and two sows, not related.
 Meet me in S. F., 1915, prices. John P.
 Daggs, Modesto, California.

Thoroughbred Berkshire and Tamworth
 Hogs for Sale—Western Hog Company,
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 large type for sale. Buy at home and
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 ony Nursery, Corning, Cal.

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 in every way. Address H. L. Humphrey,
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Glenview Poland China—Stock for sale.
 Chas. R. Hanna, R. F. D. No. 3, River-
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N. H. Locke Co., Lockeford, Cal.—Choice
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 Large type Poland Chinas; bred gilts.
 Service boars.

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Baby Chicks—All sturdy youngsters from
 good stock. Hatched right and arrive
 safely. R. I. Reds, Barred Rocks, Black
 Minorcas, White and Brown Leghorns.
 Write for circular. Orders backed now
 for delivery any time to suit you. Camp-
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 chicks that are well-hatched and strong
 from healthy, vigorous breeders. SAN
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 we can get, no matter how large the
 quantity; also fresh ranch eggs. We re-
 mit immediately. National Poultry Co.,
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S. C. W. Leghorn Cockerels, pairs and
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 Ample markets. Reduced passages for
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 INDIAN, GOVERNMENT land? What
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 rooms, bath. Chicken houses and runs
 for 2000 chickens. \$5000.00. About \$1500.00
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 3 ribbons. Pedigreed and utility stock
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 BOX 557, LOS ANGELES. Send 25c for
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 Stock from Eastern and Southern ken-
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TURKEYS

Mammoth Bronze Turkeys—Early eggs
 for hatching now ready. Some birds
 for sale reasonable. Hillside Ranch,
 R. F. D. 11, Box 579, Los Angeles.

VETERINARY QUERIES

Continued from Page 520

down with milk fever. She was
 treated by a veterinarian and was up
 again in about eight hours. He also
 removed the afterbirth. The milk is
 bloody, dark and thick. The milk is
 ropy and sometimes the cream is pink.
 The cow eats well and seems hearty
 but gives only about half the milk she
 should. Will she come back to the
 regular flow of milk and what can be
 done to correct the blood in it?—
 What is the cause of it?—Subscriber,
 Fowler.

Probably a part of the afterbirth
 still remains and the poison from it
 is causing the trouble. Better call
 back the veterinarian and have him
 wash out the womb with several
 buckets of warm water with some
 creolin or carbolic acid in it. Be sure
 to reach the farthest extremity. Also
 give the cow a pint of raw linseed oil
 with an ounce of turpentine in it once
 a day for three or four days. The tur-
 pentine will act as an internal anti-
 septic and help to stop the poison.

Tongue Loller

I have a large, six-year-old mare that
 got some barley beards under her
 tongue about two months ago. I re-
 moved the beards but the mare at
 once formed the habit of carrying her
 tongue out on one side all the time
 that the bridle is on. Can you suggest
 a remedy or cure?—Subscriber, Fall-
 brook.

This is known as tongue lolling by
 horsemen. Some owners drive such a
 horse without the bit, only attaching
 the lines to the rings of the halter.
 Some buckle a strap tight around the
 nose and under the chin about where
 the rings of the bit come, passing it
 through the side pieces of the bridle.
 Probably the best remedy is a bit
 made for that purpose. It has a flat
 plate two inches wide by three or four
 inches long attached to the middle of
 the bit so it is free to turn, the longer
 dimension of the plate being length-
 wise of the tongue. This will nearly
 always stop it. The bit is on the mar-
 ket and can be obtained of a harness
 maker.

Abortion

Please tell me what is wrong with
 my cow and what I can do to over-
 come the trouble. She was fresh last
 January without any trouble. Since
 then she has been giving as much as
 ten quarts of milk a day. She was
 bred May 6 but lost her calf about
 three weeks ago. She is now giving
 nearly six quarts of milk a day, but
 after the milk stands a day it gets
 stringy. The stringiness seems to dis-
 appear when the milk is sour. Am
 feeding baled alfalfa hay and beet
 pulp. What can I do to overcome this
 condition of the milk? Will she con-
 tinue to give as much milk or will she
 decrease and then increase again at
 the time she was due to be fresh? Will
 it be all right to breed her again in
 January?—Subscriber, Upland.

It would be impossible to tell what
 caused the abortion. From present
 conditions it seems that the dead
 foetus has poisoned the system by
 absorption, not enough to cause death
 or severe illness but enough to change
 the condition of the blood and affect
 the milk as you describe. Would ad-
 vise giving a physic of aloin, one
 ounce; turpentine, four ounces and
 raw linseed oil, two quarts. Mix,
 shake and divide into four doses and
 give one dose every day. Follow by
 giving a handful of epsom salts and
 common salt, equal parts, once a day
 for a week. She will probably con-
 tinue to give about the same amount
 of milk as now unless the feed be
 changed or increased. It will be all
 right to breed her again when she is
 in season.

The Household Department

W'EN LOVE LIGHTS DE FIAH

Raindrops tappin' at de windahs,
North win' blusterin' 'gainst de doah,
Seems lak' summer's done gone lef' us
An' ain't comin' back no moah.
Flames roarin' bright up de chim'ley,
Shaddahs playin' chase on de wall,
For w'en love builds de fiah in de cabin
Wintah can't come nigh at all.

Pickaninnies playin' in de cohnah,
Laughin' w'en de blas' knocks de doah,
Li'l faces, shinin' in de lamplight
Dat falls 'cross de ole cabin floah.
Mammy bus'lin' roun' a-singin' sof'ly
Daddy res'in' in de light an' cheer,
W'en love lights de fiah in de cabin
Nevah feel dat wintah's neah.

W'en life's stohms am fierces' roun' us
blowin'
An' de rain's come to de doah an'
knocked.

W'en de clouds shet out de light ob
noonday.
Den's de time to keep de doah tight
locked.

Long as we'ah togeddah le's be happy,
De win' may blow—le's laff along de
way,

W'en love lights de fiah in de cabin
Life's jes' lak a sweet summer day.

Helen P. Metzger.

SCHOOL LUNCHES

SPLENDID articles have come to the household department this month in response to the request for suggestions as to school children's lunches. As so often happens we are unable to find room for nearly all of them. This month we need at least a dozen pages in this department. The articles that do appear we know all readers will find exceptionally helpful and suggestive. Other articles will be used in later issues.

Prize Winners

To Charlotte M. Hoak has been given first prize this month; to Miss A. Butcher, second.

DECEMBER CONTEST

For the December contest give us your solution of the Christmas gift problem. It is a big problem to most of us, particularly this year. How will you solve it?

Prize Offers

For the best article, \$2.00 in cash; for second best, \$1.00. All articles published will entitle writer to three months' extension of subscription to the California Cultivator unless such extension has already been given this year. When writing send name of member of your family who now receives the paper so that the extension may be properly credited. Or, of course, a new subscription may be started. Please write on one side of paper only. Communications should be in this office by Thursday morning, December 8, and they will appear in the issue of December 16. Send them in as early as is convenient.

SCHOOL LUNCHES

The literature of dietetics offers much on the feeding of infants and adults, but surprisingly little that is really available to the average mother on feeding children of the school age. In the preparation of school lunches three very important points must be kept in view: 1. They must furnish the necessary material for up-building the body; 2, they must furn-

ish energy for play; 3, they must give clearness of brain for study.

"Balanced diet" is the slogan of the hygienist today, and complex and baffling tables of the fat, proteid, and starch contents of the various foods are offered. Often they are profitless to those not versed in technical terms. After all, a few common sense rules will serve the average mother of the typical healthy child. 1. Never include more than one sweet in a lunch; for instance, if you put in cake do not include jelly sandwiches. Stuffed dates, pressed figs, raisins and sweet chocolate may be used instead of cake or a little home made candy may be added. 2. If you put in hard-boiled or stuffed eggs, accompany them by plain bread and butter or lettuce sandwiches. Meat would be unnecessary as the eggs supply the hearty food. 3. It is wise to avoid the time honored pickle as it contains almost no nourishment and may interfere seriously with the proper digestion of the other food. Use ripe olives instead. 4. Always supply fresh, ripe fruit if possible. 5. Remember that ham, pork and veal require several hours for assimilation and use them sparingly; for taken all in all the meal should satisfy hunger, replenish the body's wastes, but never burden the digestive organs.

Lunches should be neatly and attractively packed. Oiled paper should be used to wrap each separate bit of food so that each food retains its own flavor. Paper containers cost very little and may be utilized to hold custards, puddings, salads, cooked fruits, etc. They are made with covers that fit securely and come in all sizes from one-eighth of a pint to one quart. Puddings and custards may be baked in them and fruit, gelatines and blanc manges may be poured into them while still warm. Each lunch box should contain a collapsible aluminum cup. A small thermos bottle is invaluable for cold or rainy days.

On account of their compactness sandwiches will always form the backbone of the lunch. Use variety both in bread and fillings. White bread, rye bread, whole wheat bread, raisin bread, steamed brown bread as well as wholesome rolls and biscuits, may be used in succession. Chopped meat, cream cheese, ground nuts, peanut butter, date, raisin and fig pastes, jellies and marmalades make up a great variety of fillings.

Eggs are always acceptable in a lunch. They may be hard-boiled or stuffed in various ways.

Simple cakes or wholesome cookies made especially for the lunches are better than left over remnants of the dinner table. Sponge cakes are very wholesome. Gingerbread is always appetizing with its spicy odor, and animal ginger cookies are a source of delight. Simple puddings in great variety or just the plain cup custards offer much nourishment in small bulk.

Rich, creamy milk may be carried in a small bottle, or on cold and rainy days hot soup or cocoa may be carried in a thermos bottle. Nothing is more nourishing in the way of a drink than thoroughly boiled cocoa.

School Lunches Relished By the Average Child

Cheese sandwiches (two slices), lettuce, apple, sponge cake.

Two graham sandwiches (fig and nut filling), cup custard, half dozen hard water crackers.

Minced lamb and celery sandwiches (white bread), grapes, peanut cookies.

Two slices of nut bread, apple and celery salad, cream cheese, ginger bread.

Steamed brown bread and butter sandwiches, rice pudding with seedless raisins, orange.

For a cold or rainy day—Bacon sandwiches, jar of potato salad, ripe olives, banana, hot cocoa.—Charlotte M. Hoak, South Pasadena.



The Great Home Builder

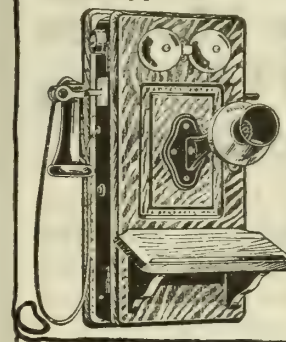
WHAT after all is more worth while than bringing comfort and safety into the home? Think what the telephone has done to tie the country house to the town and the town to the city. Don't be isolated. Get into touch with the voice of the big outside world. Know the prices that rule on farm products. Know about the party at your neighbor's house. Bring to your whole family the safety that comes with the knowledge that in the time of illness or fire the whole community is within call.

Kellogg Telephones

have won their way into homes all over America because of the quality of service they give. Did you know there is a big difference in telephones? There is. Kellogg phones have to undergo an inspection more rigid than other makes. They pass through 37 distinct tests before they leave the factory. That means dollars and cents to you.

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Kellogg Transmitter is guaranteed for five years. A Kellogg lightning protector goes with every phone.



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Literature and bulletins giving the latest ideas about telephone construction sent free.

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new or renewal

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Send in your order at once.

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It is simple in construction, easily installed, reliable in operation—a handsomely finished instrument throughout—the most durable and truly economical Rural Telephone in the world!

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The California Cultivator
Weekly—24 to 32 Pages One Dollar per Year

THE SCHOOL LUNCH

The object of the school lunch should be to supply in compact form wholesome, nutritious food, sufficiently varied to meet the demands of the growing body and at the same time interfering the least possible with the activities of the mind. A little studied thought will enable one to make this selection. It is a great mistake when a mother regulates her children's diet by her own demands, for all she needs is enough to furnish energy and repair waste, while every muscle, nerve and bone in the child's body is demanding food for growth.

The growing school child will appropriate a greater amount of sweets and starch than an adult. Let this natural craving for sweets be met in such articles as figs, dates, raisins, steamed dried French prunes and pure honey. Let the proteids be confined more to the easily digested sorts, as milk and eggs with white-fish when meat is desired. Beans, peas, lentils and nuts are rich in protein and are good substitutes for meats. Use whole wheat, graham and rye flour, corn meal and corn, hominy, oats and less fine flour. These, with such vegetables as can be used cold, and plenty of fresh fruits in their season may form the basis for a great variety of substantial and appetizing school lunches. The requirement of each child should be considered, for the child who trudges a long distance over country roads naturally requires different food from the one who rides to school or walks only a short distance.

If possible have a few of the small baking dishes known as ramekins so that when baking dessert a small dish can be baked for the lunch box for, as a rule, the children think them nicer when in an individual dish. An attractively arranged luncheon has much to recommend it. Keep ready for packing the lunch box a roll of waxed paper and a package of Japanese paper napkins. Let sandwiches, cakes, etc., be wrapped separately to prevent drying or absorbing flavors from other foods. A small flask may be used for carrying milk. Delectable dainties to be carried in cups or small screw top jars are cup custards, rice and tapioca puddings, blanc mange, junket, etc., or a tightly covered jelly glass for carrying baked apple, canned or stewed fruit. A spoon and a drinking cup should also form a part of the lunch box equipment. If a special place on the pantry shelf or in a drawer is kept for these furnishings the work of putting up the lunch is reduced to a minimum. Scooped out rolls make excellent receptacles for a little salad, or scrambled eggs and many other things which, while supposed to be eaten not, are really good cold.

Instead of the heavy pie, cake and doughnuts that so often go into the school lunch box have whole wheat, graham or rice wafers, sponge cake and raisin, date or fig bread.

The sandwich, which is the main feature of the lunch, may be supplied in many pleasing and appetizing combinations which may be made of various breads, using such fillings as will harmonize with the menu they are to accompany. In preparing the sandwich cut the bread into one-fourth inch slices. When butter is used let it be of the sweetest, and if inclined to be too hard to spread well, work it with a silver knife or small wooden spoon until creamy and it will not crumble the most delicate bread. Cut into the desired shape, wrap in paraffin paper and a dainty, fresh sandwich will be the result.

Delicious sandwich filling may be made of cottage cheese mixed with chopped nuts or chopped olives and moistened with cream, or spread the bread with mayonnaise with a layer of chopped olives between slices.

Egg filling—Three hard-boiled egg yolks, one tablespoon thick cream, lemon juice and salt to taste. When well mixed spread on thin slices of buttered bread.

Lettuce mixture filling—Finely chopped lettuce with a little onion and celery made into a paste by adding a mixture of hard-boiled yolks dissolved in a little thick cream or olive oil. Add salt and lemon juice to taste. A nut preparation called Nuttoline added to the above mixture makes a delicious sandwich filling.

Add the Nuttoline according to taste.

A potato sandwich is a favorite with some children and is prepared by placing between thin slices of buttered bread, mashed potatoes, well seasoned with cream or butter, finely chopped onion, parsley and celery if such seasoning is liked.

Lima Bean Filling—Soak lima beans for several hours, when the outer skin or hull can be easily slipped off between the fingers. Put to cook in boiling water. Boil until tender, then simmer slowly, cooking as dry as possible without scorching. When about half cooked add several chopped celery stalks, a bit of onion and a small spray of green sage, if desired, and salt. When done season with thick cream.

Vegetable sandwich filling—One cup cold string beans mashed to a pulp with a silver fork, olive oil, salt and lemon juice to taste. Cold asparagus and green peas are equally good for these sandwich fillings. Sliced cucumber or tomato make a very refreshing and appetizing sandwich.—Miss A. Butcher, Healdsburg.

SCHOOL LUNCHES

The school lunch is often an unpleasant thing, both for the one who prepares it and the one who eats it. I have officiated in both capacities for several years as pupil, teacher and homekeeper.

If certain rules are followed the task becomes more pleasant, for the worker finds satisfaction in making the luncheon as dainty and attractive as possible, and when the child opens his lunch box at noon he finds an appetizing little picnic dinner which digests easily and helps him to avoid that dull, listless afternoon period which all teachers dread and which in many cases is caused by eating unpalatable and indigestible foods.

Simple, easily digested lunches may contain plain and sweet sandwiches (preferably of graham or whole wheat bread), sliced meats, boiled eggs, cookies or cake, fruit, especially apples, oranges and bananas. Some of the softer fruits do not pack well and sometimes spoil the whole lunch. An occasional surprise dish may be added to the usual lunch of sandwiches and fruit. This may consist of a custard or bread pudding, potato salad, stewed prunes and peaches, etc. Avoid sending pie; it does not carry well usually and is not good for the child. Radishes, carefully washed and dried on a cloth often add to the lunch. Pickles should be used sparingly as they are indigestible.

Try to have something different in the lunch box every day. At least prepare it in a different way. If you had sliced beef sandwiches yesterday today mince the beef and mix with a little sweet chili sauce or boiled salad dressing. Variety is the spice of the school luncheon.

Some sandwiches I have found very good are these: Cheese and nuts ground together, raisins and nuts ground, chipped beef, chili sauce, pimiento (spread very thin), salad dressing, marmalade, especially apricot and orange. Cold chicken, beef and mutton, prepared mustard, banana (slice thin), Dutch cheese, lettuce, sardines (mince fine.)

For all of these sandwiches use bread cut rather thin, spread evenly with butter and any of the mixtures. Always cream the butter so it will spread smoothly. Do not put in all sweet sandwiches, nor too much cake and sweets. The nut and cheese fillings are good to use in place of meat.

Wrap all sandwiches in paper (waxed if possible) cookies and cake in separate papers, and place the egg or fruit at the side, not on top where it will crush into the sandwiches. A little time and thought spent on your child's luncheon will do much toward making him happier and healthier.—Mrs. Alice Hendershot, Van Nuys.

SCHOOL LUNCHES

When children reach the age where school keeps them away from a hot dinner at noon the chief meal must be given at night. Cooked fat is to be avoided, such as occurs in fried foods, pies and rich cakes. If a child is intelligently fed he should not readily succumb to colds and other children's diseases. Toast, hard, unsweetened

crackers and butter are much better than soft bread. Any of the following are easily made:

Boston Brown Bread—One cup whole wheat flour, one cup corn meal, half cup warm water, half cup molasses, one cup thick sour milk, three-fourths level teaspoon salt, one and one-half teaspoon soda, one cup raisins. Preparation, ten minutes; steaming three hours. Mix dry ingredients first, add milk, water, molasses and mix well. This bread makes excellent sandwiches with lettuce and nuts.

Very Plain Tea Cake—Half cup of butter, two cups sugar. Work sugar and butter together. Add four beaten eggs, three teacups sifted flour, an even teaspoon soda dissolved and

strained, ground nuts and lastly, a teacup sour milk.

Fruit Paste—This is suitable for fruit tarts generally, apples, perhaps, excepted, for which we recommend a puff paste. To three-quarters of a pound of butter put one and one-half pounds flour, three or four ounces sifted loaf sugar, yolks of two eggs, half pint of new milk. Bake in a moderate oven. Nuts and fruits are easily kept on the shelves for the lunches.—Miss Mae Turner, Woodland.

SUGGESTIONS FOR SCHOOL CHILDREN'S LUNCHES

No lunch being complete without sandwiches, one of the first requisites is fresh, wholesome bread.

Various kinds of meat sandwiches can be formed, as every mother knows, sliced boiled ham, deviled ham, tongue, tuna, chicken, etc. Odd bits of cold meats left from the previous meal, when ground and mixed with mayonnaise or a boiled dressing are very appetizing.

Lettuce leaves between many kinds of sandwiches improve them greatly. Graham bread can also be alternated with the white, which makes a variety and is good for the growing children.

Cheese filling, when combined with bits of chopped pimiento, is often relished. Cucumber pickles sliced thinly and placed between the common bread, butter and lettuce sandwich, as well as hard boiled eggs mashed with a fork and seasoned to taste will be found good.

Most every child is fond of peanut butter or jelly between thin slices of bread and butter. Raisin bread is often used.

Either beet or cucumber pickles give an added relish to the lunch as well as radishes and celery in season.

Fresh fruit of some variety is available in California most of the year around and nothing is more healthful, nor more fully enjoyed.

Children are usually very fond of cookies and doughnuts. Most every mother has her own favorite recipes for making these, but for the one who does not do her own baking, these may be obtained from the bakery. A one-egg cake may be baked in gem pans, and gives the child the idea of an individual cake, without much time or expense. These may be frosted if time permits.

I knew one mother who used to bake small pies in tiny individual pans, and you can imagine how much they were enjoyed by the youngsters.

By wrapping each article in oiled paper which may be obtained at a small cost, every part of the lunch will taste fresh and will be as much enjoyed by the child as if it were eaten from the dining table.—Ruth Marie Myers, Escondido.

CHILDREN'S LUNCHES

If you will keep before you two watchwords while planning the children's lunches the lunches will less often find their way to the janitor's chickens and more frequently into the little mouths they are planned for, and these are variety and daintiness. A lunch can be substantial and yet as dainty and varied as a mother's time will permit. Don't put in the same thing in the same old red-bordered napkin every day. A few paper napkins in varied borders and designs, pumpkins, kittens, leaves, fruit, etc., kept on hand will help wonderfully. Oiled paper, too, "makes things look so good" besides keeping them fresher. What child doesn't like surprises, and where is there a better place for them than in the lunch box? A gingerbread man, a tiny cake, a bit of good candy, anything for variety. And don't forget the children's craving for sweets and do supply it outside of the candy store by nature's ways as far as possible. Honey and good maple syrup stand first here, cane sugar and penny candy at the foot of the list. Teach children to avoid the latter as the plague, but give them something in its place.

And don't forget fruit here in this state of fruits the year through, "an apple a day" if nothing else is available, but usually something else can be found. A bit of fruit in a tightly covered jar with a spoon to eat it with will taste so good sometimes.

Continued on Page 597



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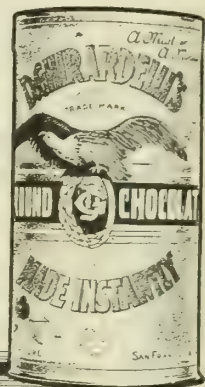
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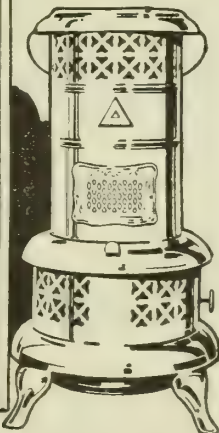
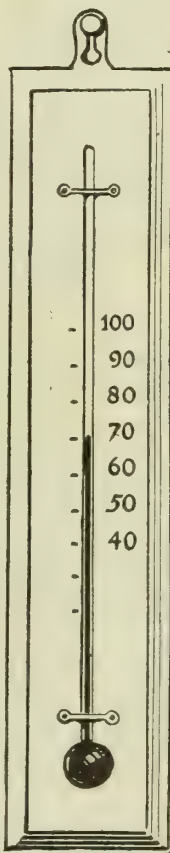
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San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Nov. 23, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:

Creamery Extras	30
Firsts	26

CHEESE

Prices to trade, 1 to 2 cents higher:

Arizona Daisies	15
Arizona Longhorn	17@17½
California Fresh	17
Eastern Cheddar	20@21
Domestic Swiss	23
Eastern Daisy	18
Eastern Twins	18½
Imported Swiss	40
Longhorn	18½@19
Oregon Triplets	17@18½
Tillamook	18@18½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts	44
Candled	46@48
Northern Fresh Extras, f.o.b. S. F.	57

Prices to producers:

Hens, lb.	15@17
Roosters, old	9
Broilers, lb.	25
Fryers	16
Roasters, lb.	14
Turkeys	19@20
Ducks	15
Geese	14
Squabs, doz.	1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.	6.75
Prime Steers	7½@7¾
Heifers	6¾@6¾
Calves, lb.	9@9½
Sheep—	
Ewes, head	4.50
Wethers	5.00
Lambs, head	5.00@5.25

POTATOES

Wholesale selling prices:

Sweets, yellow, lug	60
Rurals	1.10@1.15
Merced, cwt.	1.75
Idaho Russets	1.45@1.60
Northern Burbanks	1.45@1.65
Salinas	1.85@1.90

ONIONS

Wholesale selling price:

White Globe, lug	1.00
Brown Globe, cwt.	1.25@1.35
Garlic	1.15
Sets—	
White, lb.	8
Yellow, lb.	7

VEGETABLES

Wholesale selling price:

Artichokes, Northern, doz.	1.00@1.25
Beets, doz.	35
Beans—	
Wax	7@8
Limas	7@8
Green	7@8
Brussels Sprouts, lb.	9@10
Cabbage, sack	1.25
Northern, lb.	1½@1¾
Carrots, doz.	30
Cauliflower, doz.	75
Celery, doz.	75
Chicory, doz.	40
Chives, doz.	1.00
Corn, lug	55@60
Cucumbers, lug.	1.35@1.55
Pickling, lug.	1.50@1.75
Egg Plant, lb.	3@3½
Escarole, doz.	90
Horseradish, lb.	11@12
Leeks, doz.	40
Lettuce, doz.	30
Mint, doz.	40
Okra, lb.	10
Onions, Green, doz.	20
Oyster Plant, doz.	40
Parsnips, doz.	35
Peas, Telephone	10
Peppers—	
Bells	5@5½
Chili, lb.	5
Pimientos, lb.	6
Rhubarb—	
Strawberry	1.00
Winter Crimson	85
Spinach, doz.	20
Squash—	
Crookneck, box	40
Hubbard, lb.	1½@2
Summer, lug	40@45
Green Small	55@60
Tomatoes, lug.	50@70
Turnips	40

FRESH FRUIT

Wholesale selling price:

Apples—	
Bellflower	1.05@1.25
Jonathans	1.50@2.00
King David	1.50@1.65
Peaches, White	1.10@1.25
Peaches, White	1.10@1.15
Spitzenberg	1.35
Yellow Newtown Pippins	.95@1.25
Bananas, lb.	4½
Berries—	
Strawberries, basket	8@10

Blackberries, basket	12
Raspberries, basket	13@15
Casabas, crate	2.50
Cranberries, bbl.	9.25@10.75
Figs—	
Black	1.10@1.25
White	.85@90
Grapes—	
Black Hamburg, lug	75
Malagas, lug	1.10
Morocco, lug	1.00
Tokay, lug	1.35
Cornichon, lug	.90
Red Emperor, lug.	1.50
Guavas, lb.	.6
Peaches—	
Clings, lug.	1.00
Pears, Bartlett, packed box	3.00
Winter Nelis, lug.	1.50
Persimmons, lb.	.6@7
Pineapples, lb.	.6@7
Pomegranates, lug	1.00
Quinces, lug	.50
Watermelons, lb.	1@1½

CITRUS FRUIT

Wholesale selling price:

Lemons	2.00@2.50
Juice Lemons	1.25
Grapefruit, Seedless	4.50@5.00
New	2.75@3.00
Limes, basket	1.00
New Navels	3.85
Valencias	5.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, boxes	8@9
Apricots	9½@16
Figs—	
Loose black, box	1.20
Loose white, box	1.44
Calimyrna, box, Gold Seal 1's	1.50
Peaches	5½@7
Pears, lb.	.11
Prunes, fancy pack	5½@15

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	14.00
No. 2	12.00	10.60
Buds	20.00	17.50
Jumbos	18.50	16.60
See almond quotations by Association under San Francisco.		
Feanuts—		
California, Raw	5@6	
Japan	5½@6	
Eastern	6¾@7	
Chinese	5	
Pecans	17	

HONEY

Wholesale selling price:

Comb, Fancy Water White	16
Extracted Water White	7½@8
White	7
Light Amber	6
Beeswax	25@26

RICE

Wholesale selling price:

California	4.25@4.75
Broken	2.75@4.25

BEANS

Wholesale selling price:

Limas	5.25
Lady Washington	6.75
Pinks	5.00
Black Eyes	4.00
Lentils	17.00@20.00
Manchurian Reds	4.00@4.25
Small White	6.75
Garbanzos	5.75

HAY

Prices to producer f. o. b. Los Angeles:

Barley	14.00@15.00
Wheat Hay	12.00@15.00
Tame Oat	14.00@18.00
Alfalfa	12.50@15.00
Volunteer	6.00@8.00
Straw	5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:

Corn, Yellow	2.00
Corn, White	2.20
Wheat	2.05@2.10
Oats, White	1.75
Oats, Hulled	2.25
Egyptian Corn	1.85
Kaoliangs	1.50
Barley Seed	1.60
Barley, Hulled	1.95
Kaffir	1.75
Milo	1.60

Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:

Alfalfa Meal	1.25
Bran, Heavy	1.50
Alfalfa Molasses, per cwt.	1.35
Beef Scraps	3.05@3.15
Beet Pulp	1.25
Molasses Beet Pulp	1.20
Cracked Corn, cwt.	2.05
Cracked Wheat, cwt.	2.20
Cotton Seed Meal	1.90
Bone, Green	1.85@1.95
Meat Meal	3.00@3.10
Charcoal	1.90@2.00
Fish Meal	2.50
Oil Cake Meal	3.15@3.25
Rolled Barley	1.55
Rolled Oats	1.80
Middlings	1.80
O. & W. Middlings	1.80
Feed Meal	2.10
Scratch Feed	2.10@2.20
Oyster Shell	1.15@1.25
Scratch Gritlets	2.30@2.40
Best Chick Feed	2.80@2.90
Poultry Mash, 90-lb. sk.	1.90@2.00

San Francisco Markets

SAN FRANCISCO, Nov. 22, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fresh Extras	29½
Prime Firsts	25½
Firsts	25

CHEESE

Wholesaler to retailer:

Young America	16
California Flats	16
New York Cheddar	19
California Cheddar	17½
Oregon Twins	14½
Oregon Young America, fancy	14½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:

Fresh Extras	57
Select Pullets	50
Hens, lb.	15@17
Fryers	19@21
Broilers	26@30
Roosters—	
Young	19@20
Old	9@10
Squabs	3.00@3.50
Turkeys—	
Live Young	25@27
Live Old	20@22
Ducks	12½@14
Geese, pair	2.25@2.75

LIVE STOCK

San Francisco prices, gross weight:

Steers	4@6½
Cows and Heifers	3@5½
Calves, lb., live wt.	6@9
Hogs	4@6½
Wethers	6@6½
Ewes	5@5½
Milk Lambs, lb.	7½@7¾

POTATOES

Wholesale selling price:

Salinas Burbanks, cwt.	1.50@1.75
Delta Burbanks, cwt.	.80@1.20
Sweets	1.35@1.50

ONIONS

Wholesale selling price:

Onions, cwt.	.85@1.00
Garlic	10@12½

VEGETABLES

Wholesale selling price:

Beans—	
String, lb.	6@8
Limas, lb.	6@8
Wax, lb.	7@10

WEATHER CONDITIONS

For the Week Ending November 20, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

—Rainfall Data—

	Past Week	Seasonal to Date	Normal to Date
Eureka	.80	3.08	7.10
Red Bluff	.06	1.42	4.25
Sacramento	.12	.79	2.67
San Francisco	.13	.87	2.98
San Jose	.01	.22	2.29
Fresno	.00	.26	1.65
Independence	.00	.09	1.51
San Luis Obispo	.00	.34	2.76
Los Angeles	.00	1.34	1.68
San Diego	.00	.72	1.03

—Temperature Data—

—Past Week—

Cucumbers, lug.	50@75
Lettuce, crates	1.25@1.40
Peppers—	
Bell, box	40@50
Tomatoes, lug.	65@1.00

FRESH FRUIT

Wholesale selling price:

Apples—	
Newtown Pippins	65@1.00
Peaches, White	60@85
Jonathans	60@1.00
Bananas, Hawaiian, bunch	75@1.75
Cranberries, Eastern, bbl.	11.00@11.50
Grapes, all varieties, crates	65@1.25
Huckleberries, lb.	5@8
Pears—Winter Nelis, box	1.00@1.75
Persimmons, box	60@1.00
Pineapples, doz.	1.25@2.00
Pomegranates, half orange box	75@1.25
Quinces, box	75@1.50
Raspberries, chest	6.50@9.00
Strawberries, chest	6.00@7.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit, seedless	4.00@6.00
Seedlings	2.50@3.50
New Crop	3.25@3.50
Lemons	1.50@3.50
Lemonettes	1.50@1.75
Limes, Mex., cs.	6.00@6.50
Limes, Mex., cs.	5.50@6.50
Navels, new	2.75@3.00
Valencias	3.75@4.75

DRIED FRUITS

Wholesale prices are:

PRUNES—Local selling price, bulk basis in carload lots, 1915 crop: Santa Claras, 30-40s, 6½c; 40-50s, 5½c; other sizes, 5@5½c. All outside sections ¼c lower.

Other Fruits	Stand-	Choice	Extra	Fancy
50-lb. boxes	ard.			
Peaches	4 c	4½c	5 c	5½c
Pears	7 c	8 c	8½c	10½c
Apples	8 c	8½c	9 c	
Apricots	7½c</			

Oats, Red, Feed	1.25@1.32
Oats, Red, Seed	1.37@1.42
Oats, White, Feed	1.35@1.40
Oats, Black, Feed	1.50@2.00
Millet	2 1/4@3
Rape	2 1/4@2 1/2
Flaxseed	5@5 1/2
Rye	1.55@1.57 1/2

FEED STUFF

Wholesale prices:	
Alfalfa Meal, car lots	16.50@17.50
Bran, ton	25.00@26.00
Feed Cornmeal	38.50@39.00
Cracked Corn	38.50@39.00
Rolls Barley, ton	27.00@28.00
Middlings	31.00@33.00
Shorts	26.00@27.00
Oilcake Meal	37.50@39.00
Cocanut Oilcake Meal	20.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 23, 1915.

Valencias have come to their own and almost entirely taken the Thanksgiving market. Neither California nor Florida Navels have been sufficiently ripened and as yet are being held back until they can show the eight to one test. In Florida this is controlled by state law and in California by the will of the shippers with a desire to work in harmony with the rulings of the department of agriculture as to what constitutes ripe oranges.

Lemons are showing even better than at time of last week's report. Practically all fruit now being picked is going forward immediately. The fruit from the Mediterranean is lighter in receipt than for several years at this time.

Shipments

Shipments of oranges from Southern California to date since November 1: 395 cars, lemons 219, total 614. To same date last season: oranges 251, lemons 217, total 468. From Central California this season: oranges 46, lemons 30, total 76. Last season same date: oranges 132, lemons 37, total 169. From Northern California to date: oranges 12. Same date last season, 28.

NEW YORK, Nov. 22.—Fourteen cars Valencias, one car lemons sold. Market is strong and higher on oranges and lemons. Weather fair.

VALENCIAS—	Avg.
Old Mission, xf, Chapman	\$7.65
Old Mission, fy, Chapman	6.30
Golden Eagle, sd, Chapman	5.10
Lady Rowena, Chapman	4.30
Old Mission, xf, Chapman	7.85
Old Mission, fy, Chapman	6.40
Golden Eagle, Chapman	5.00
Lady Rowena, Chapman	4.30
Cal. Belle, S.T. Ex.	6.70
Carmencita, S.T. Ex.	4.35
Wm. Tell, O.R. Ex.	5.35
Golden Beaver, O.R. Ex.	4.55
Glendora Hgts., Foothill A.C.G.	5.05
Evolution, A.C.G. Ex.	4.80
Possum, A.C.G. Ex.	3.70
Golden Bear, A.C.G. Ex.	4.40
LEMONS—	Avg.
Peerless, (vent.)	\$3.75
Coronet, (vent.)	3.80
Sunset, (vent.)	3.50
Mission Bells, (vent.)	3.25
Bull's Eye, (vent.)	2.65

BOSTON, Nov. 22.—Ten cars sold. Market easier.

VALENCIAS—	Avg.
Alphabetical, O.R. Ex.	\$5.00
Hewes Park, O.R. Ex.	5.00
Transcontinental, O.R. Ex.	4.85
Copa De Ora, O.R. Ex.	3.95
Hewes Park, O.R. Ex.	5.05
Goldfinch, O.R. Ex.	4.30
Arroyo, S.T. Ex.	4.40
Ticktock, O.R. Ex.	4.45
LEMONS—	Avg.
Pronghorn, O.K. Ex.	\$2.05
Buck	1.75
Lemon Cove, C.C. Ex.	3.10
Gateway	2.75
Pet	3.60
Greyhound	2.95

PITTSBURG, Nov. 22.—Five cars sold. Market is stronger, higher.

VALENCIAS—	Avg.
Searchlight, O.R. Ex.	\$4.30
Foothill Beauty, O.R. Ex.	3.70
Geo. Washington, O.R. Ex.	4.35
LEMONS—	Avg.
Pet, S.D. Ex.	\$3.85
Greyhound	3.60
Buck	3.20
Cycle, F.C. Ex.	4.35
Oriole	3.80

PHILADELPHIA, Nov. 22.—Three cars sold. Market is firm.

VALENCIAS—	Avg.
Rex, S.T. Ex.	\$3.35
Foothill Beauty, O.R. Ex.	3.10
Saddleback, O.R. Ex.	3.85
Standards, S.T. Ex.	2.75
Golden Beaver, O.R. Ex.	4.75
LEMONS—	Avg.
Lemon Cove, C.C. Ex.	\$3.50
Gateway	3.25

ST. LOUIS, Nov. 22.—Three cars sold. Market is lower.

VALENCIAS—	Avg.
Oriole, F.C. Ex.	\$3.00
Possum, A.C.G. Ex.	3.25
Hunter, A.C.G. Ex.	2.65
LEMONS—	Avg.
Oriole, F.C. Ex.	\$2.85
Sunside, S.P. Ex.	2.75
Wave	2.35
Standard	2.25

CLEVELAND, Nov. 22.—Five cars sold. Market is higher on good quality Valencias.

VALENCIAS—	Avg.
Tournament, S.T. Ex.	\$3.80
Colombo, S.T. Ex.	4.50
Green Crusader, A.C.G. Ex.	3.85
Las Palmas, S. T. Ex.	3.50
LEMONS—	Avg.
Mogul, S.T. Ex.	\$3.45
Nimrod	2.45
Lancer	2.30
Pirate	1.50
Jupiter, Am. Ft. Dist.	1.65
Assyrian	1.25

CINCINNATI, Nov. 22.—Three cars sold. Market is lower.

VALENCIAS—	Avg.
Standards, S.T. Ex.	\$2.85
Plain Boxes, S.T. Ex.	2.15
LEMONS—	Avg.
Circus, Sparr Ft. Dist.	\$2.15
Mars, Am. Ft. Dist.	2.55
Jupiter	2.05
Del Oro, Sparr Ft. Co.	1.40

CHILDREN'S LUNCHES

Continued from Page 525

Anything in a jar is good, a left-over vegetable or a bit of salad may be made very tempting.

In sandwiches great variety can be obtained also. Sometimes toast the bread; sometimes cut it in different shape; but don't, as you value your child's health, use white bread day after day. The coarser breads are usually preferred by children and they are certainly far better for them.

And lastly, the biggest don't of all, don't let a child take a lunch unless it is absolutely necessary, but if it cannot be avoided then put up the most tempting lunch possible instead of giving the child a dime and trusting to luck that it will not go for pickles and candy to treat the crowd.

Lunches for One Week

Monday—Lettuce and graham bread sandwich, jelly and graham bread sandwich, tiny pot of cold baked beans, one ginger cookie, one apple.

Tuesday—Egg and graham bread sandwich, apple turnover, ginger bread.

Wednesday—Toasted bread and bacon sandwich, jar of apple sauce, one cookie, one large peach.

Thursday—Graham bread and honey sandwich, peanut butter sandwich, jar of salad (very little dressing), banana.

Friday—One bun, buttered, stuffed egg wrapped in lettuce, graham crack-

ers, jar of maple syrup or honey.

Why not slip in an extra bit some times for the child to share with some one? Could one teach generosity in a better way?—Mrs. L. L. M.


LOS ANGELES COUNTY FARM BUREAU

At a meeting held last Saturday and attended by men representing the various chamber of commerce and farmers' organizations throughout Los Angeles County definite steps were taken toward bettering agricultural conditions. The purpose of this meeting was to agitate a movement and formulate plans which will result in appointing a county farm adviser.

It was decided to call a meeting during the latter part of December to organize a county farm bureau at which time talks will be made by Dr. Thomas F. Hunt, member of the college of agriculture, and others interested in improving agricultural conditions are especially urged to be present.

Those appointed to act as an executive committee are: J. H. Norton, chairman, president of Gardena Valley chamber of commerce; D. B. Livingston, secretary of Long Beach chamber of commerce; R. W. Hadden, secretary of Ocean Park chamber of commerce; Jerome Reynolds, secretary of Covina Valley Farmers' Club; J. W. Williamson, Downey; W. W. Felgate, Sierra Madre chamber of commerce; Murray J. Black, Los Angeles.

Rice growers are taking steps to secure more just treatment in the matter of freight rates for rice from the Sacramento Valley. The freight is now one and a half the rate on barley.




Stop Losing Money

If your clipper bruises an orange's skin you open the way to decay. The cut may be too small to notice—one decaying orange may spoil an entire box. You won't bruise fruit if you use **WISS ORANGE CLIPPERS**


The blades are specially curved and ground; the points and outer edges are rounded to avoid bruising.

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Send for it!

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Gentlemen: Kindly send me a copy of your booklet "The Yuba Ball Tread Tractor."

Name.....

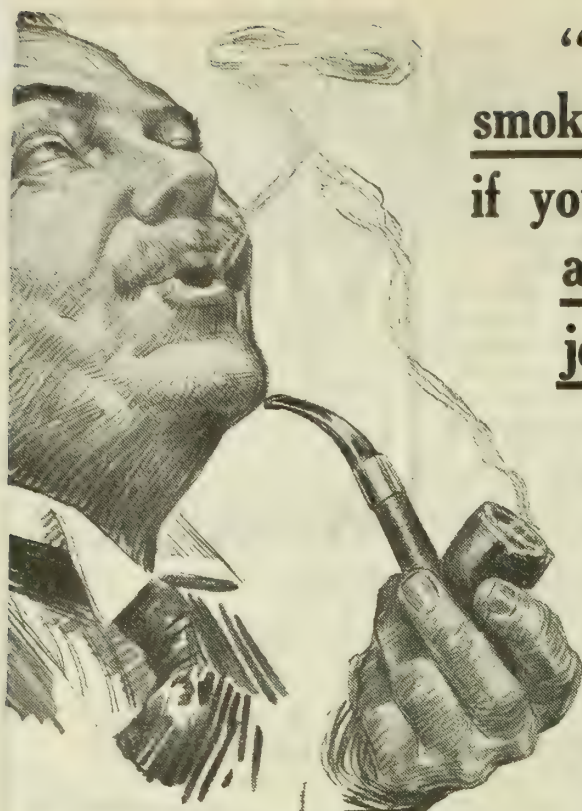
P. O. Box..... Town.....

State..... Size of Farm..... acres

Check Main Crop Raised: Fruit.... Grapes....

Grain..... Hops.... Rice.... Alfalfa.... Hay....

THE YUBA
BALL TREAD TRACTOR



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Tobacco Co.

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smoke it yourself
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all-fired
joy-feeling!"**

Prince Albert is the cross-lots cut to tobacco satisfaction, whether you smoke a jimmy pipe or makin's cigarette! It hands out more genuine happiness each puff, and fresher fragrance each puff than you ever did dream would fall to your lot. The patented

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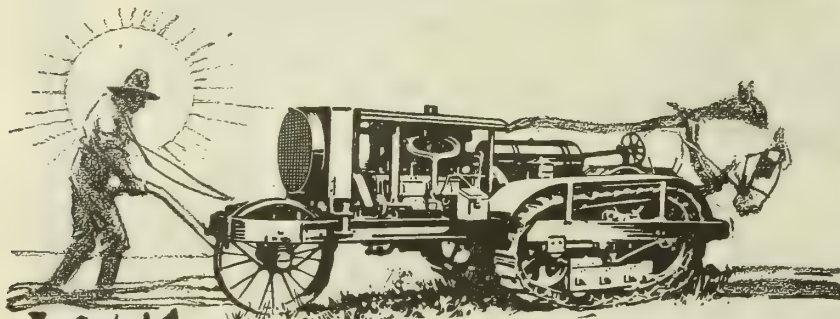
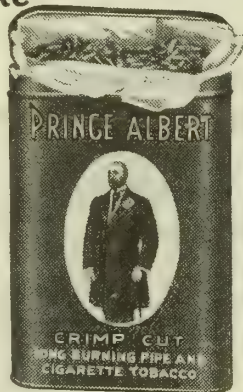
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Don't linger about what you're going to do about this pipe-packing and makin's-material question. Because, men, you're losing fun and contentment.

You buy some Prince Albert in the tippy red bag at a nickel or get a tidy red tin for a dime; or pick the handsome pound and half-pound tin humidors. But of all the P. A. packages, you'll find that classy crystal-glass pound humidor what you *need most!* The sponge-moistener top keeps the friendly tobacco in such bang-up trim!

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Little Stories of Success

No. 10

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E. A. Brim of Williams says: "Having used a Caterpillar almost 3 years, doing all kinds of work, I find that the expense of this work is at least one-half less than doing the same work with teams."

Cy Hermle, Winters, says: "I figure the Caterpillar is half cheaper than mules, counting all wear and tear."

Sleeper and Waller, Santa Ana, says: "In figuring the difference in cost against mules, we made a saving of \$850 during our harvest."

Can you afford to plow with teams any longer? Figure it out, interest, depreciation, feed, everything. Then write us for the actual costs of doing work with a Caterpillar "30" as reported to us by Caterpillar owners.

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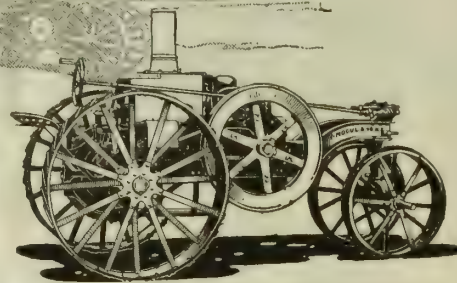
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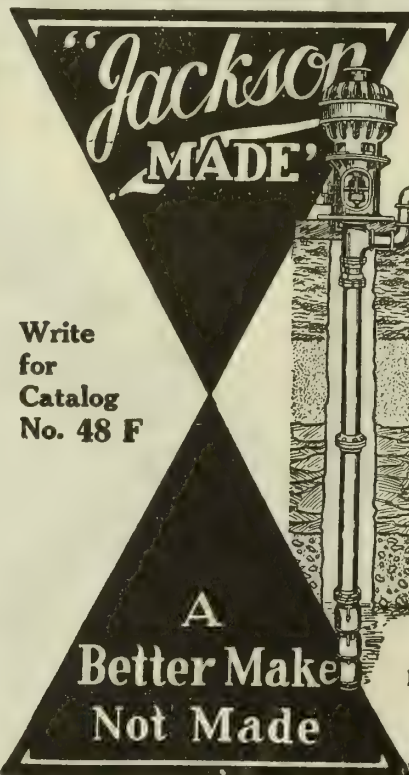
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Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

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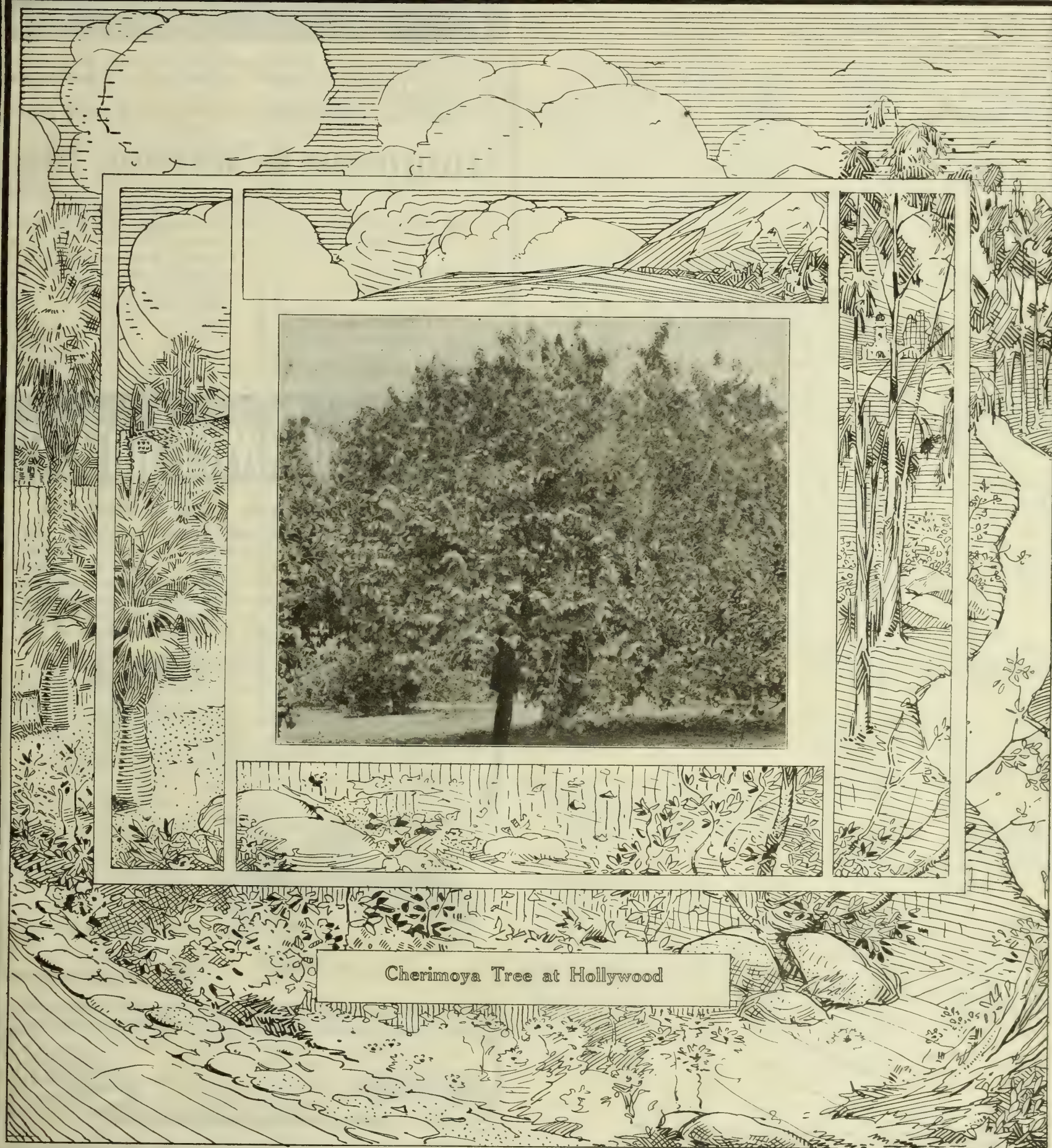
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LOS ANGELES

December 2, 1915

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EVERY ISSUE BEING A REMINDER OF THE GIVER

Your Favorite Magazines at Cut Prices

Clubbing Price List Season 1915-1916

This list is prepared annually for the benefit of Cultivator subscribers. The prices given allow our readers the lowest figures possible, in return for which, all we require is that to all orders a year's subscription to the Cultivator (Class 18) be added at 90c (regular price \$1.00 per year).

We can supply any periodical published. The lowest price of any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage, and prices must be obtained by correspondence. Subscriptions may be either "new" or "renewals" (except where otherwise stated in the list), but it is important that this information be given in each case.

The pricing of various combinations of magazines is a simple matter; all are listed according to class number, and this class number multiplied by 5 gives the cost price.

EXAMPLE.

Class No.	Regular Price
35—Collier's Weekly	\$2.50
40—The Review of Reviews	3.00
23—Delineator	1.50
18—Cultivator	1.00

116 x 5 \$5.80 Club price for all. Amount saved on this club..... \$2.20

CLASS 7.

American Poultry World	\$0.50	Any two
Farm and Home .....	.50	Class 7
Farm and Fireside .....	.50	with
Poultry Success .....	.50	Culti-
Reliable Poultry Jour- nal .....	.50	vator
Woman's World .....	.35	\$1.60

CLASS 8.

American Messenger	\$0.50	Any two
Animal Husbandry .....	.50	Class 8
Boy's World .....	.50	with
Girl's Companion .....	.50	Class 8
Housewife (see special club below) .....	.50	Culti-
McCalls .....	.50	vator
Northwest Poultry Jour- nal .....	.50	\$1.70
To-days Magazine .....	.50	

CLASS 9.

Inland Poultry Journal...	\$0.50	One of
Swine Breeder's Journal...	.50	Class 9
		with
		Culti-
		vator
		\$1.35

CLASS 12

Designer	\$0.75	Any one
Hints (the Entertainment Magazine)	1.00	Class 12
Home Needlework .....	.75	with
Young People's Weekly...	.75	Culti-
Woman's Magazine .....	.75	vator
		\$1.50.

CLASS 15

American Bee Journal...	\$1.00	Any one
Baby	1.00	Class 15
Commoner	1.00	with
Ladies' World	1.00	Culti-
		vator
		\$1.65

CLASS 16.

Cooking Club Magazine...	\$1.00	One of
Gas Engine	1.00	Class 16
		with
		Culti-
		vator
		\$1.70

CLASS 17

American Poultry Jour- nal	\$1.00	Any one
American Boy	1.00	Class 17
Black Cat	1.00	with
Boston Cooking School Magazine	1.00	Culti-
Boy's Life	1.00	vator
Boy's Magazine	1.00	\$1.75
Little Folks (new)	1.00	Any two
Modern Priscilla, Needle- work	1.00	Class 17
Northwest Agriculturist...	1.00	with
Orange Judge Farmer...	1.00	Culti-
Watson's Magazine	1.00	vator
		\$2.60

CLASS 20

Munsey's	\$1.00	Any one
McClure's Magazine	1.00	Class 20
Breeder's Gazette	1.00	with
Hoard's Dairyman	1.00	Culti-
Opportunity	1.50	vator
Country Gentleman	1.00	\$1.90

CLASS 23

Christian Herald	\$1.50	Any one
Delineator	1.50	Class 23
Metropolitan	1.50	with
Modern Electrics and Mechanics	1.50	Culti-
Garden	1.50	vator
Mother's Magazine	1.50	\$2.05
Musical	1.50	Any two
Photoplay Magazine	1.50	Class 23
Popular Electricity	1.50	with
Technical World	1.50	Culti-
		vator
		\$3.20

CLASS 25

American Magazine	\$1.50	Any one
Baseball Magazine	1.50	Class 25
Etude (for all music lovers)	1.50	with
Everybody's	1.50	Culti-
McCall's 3 years and 3 patterns	1.50	vator
Motion Picture Story Magazine	1.50	\$2.15
Overland Monthly	1.50	
Out West	1.50	
Pictorial Review	1.50	
Woman's Home Compan- ion	1.50	

CLASS 30

Ainslee's	\$1.50	Any one
Cosmopolitan	1.50	Class 30
Good Housekeeping	1.50	with
Hearst's	1.50	Culti-
Ladies' Home Journal...	1.50	vator
Modern Priscilla, 2 years	2.00	\$2.40
Popular Mechanics	1.50	
Saturday Evening Post...	1.50	
Harper's Bazaar	1.50	
Violinist (Chicago)	1.50	

CLASS 35

Collier's Weekly	\$2.50	Any one
New World (new)	2.00	Class 35
School Arts Magazine...	2.00	with
Sunset	2.50	Culti-
		vator
		\$2.65

CLASS 40

Modern Priscilla, Ladies' World and Pictorial Re- view	\$3.00	One of
Youth's Companion	2.00	Class 40
Lippincott's	3.00	with
System	2.00	Culti-
Review of Reviews	3.00	vator
House Beautiful	3.00	\$2.90
World's Work	3.00	

CLASS 50

Current Opinion	\$3.00	Any one
Outing	3.00	Class 50
Scribner's	3.00	with
		Culti-
		vator
		\$3.40

CLASS 55

Independent	\$3.00	Any one
Travel	3.00	Class 55
American Homes and Gardens	3.00	with
Scientific American	3.00	Culti-
		vator
		\$3.65

CLASS 70

Century Magazine	\$4.00	Any one
Country Life in America.	4.00	Class 70
Harper's Magazine	4.00	with
Harper's Weekly	4.00	Culti-
North American Review..	4.00	vator
		\$4.40

CLASS 100

Judge	\$5.00	Any one
Life	5.00	Class 100
Leslie's Weekly	5.00	with
Scientific American Sup- plement	5.00	Culti-
		vator
		\$5.90

MISCELLANEOUS

Automobile	\$3.00	Class 60
Bungalow Magazine	2.50	Class 45
Education	3.00	Class 57
Musical Courier	5.00	Class 90
Motor Age	3.00	Class 60
Outlook	3.00	Class 60
Vogue	4.00	Class 75

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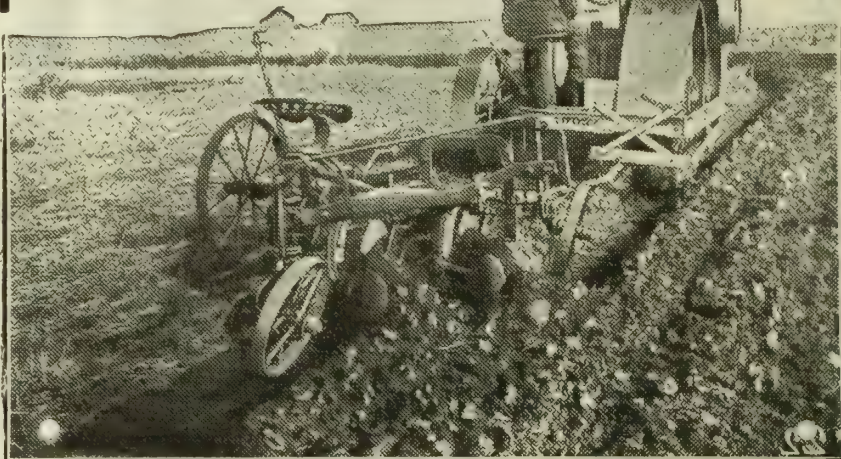
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20 h.p. at Pulley Belt
7 h.p. at Drawbar



BIG BULL does your plowing, discing, seeding; draws heavily loaded wagons, pulls hay-loaders, mowers, binders; does ALL traction work around the farm.

BIG BULL is a many-purpose power plant, and a glutton for work.

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Date.....
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Gentlemen:
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One-Man Power Sprayer

A Complete High-Grade Outfit at Small Cost

Here's the rig thousands of small farmers, orchardists and vineyardists have been looking for—a dependable, reliable, efficient, high-pressure power sprayer at small cost. One man does all the spraying. One horse can haul it anywhere. Supplies one line of hose and will cover from 2 to 3 acres a day. This is the first time you have been offered Bean quality in a low-priced outfit. Note these features of the

BEAN EUREKA

LIGHT WEIGHT—Makes it an easy pull for one horse and a mighty handy sprayer for rough and hilly land.

INEXPENSIVE TO OPERATE—One man does it all. Low first cost and practically no cost of upkeep.

NOVO ENGINE—as sturdy a sprayer engine as you can find. Novo spells satisfaction.

ALL COMPLETE—Including Patented Pressure Regulator, Rotary Agitator, Truck, Canvas Cover and Curtains, Hose, Rod, and everything complete.

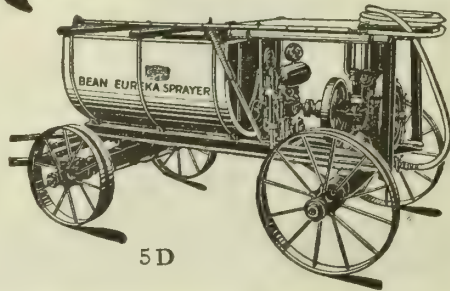
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We have just issued the largest and finest catalog we have ever offered. It illustrates and describes the entire Bean line of Hand and Power Sprayers, including several new outfits and many new improvements. A post card will bring it.

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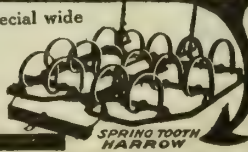
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Our harrows are stronger than the common type.
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See Announcement at Head of Editorial Page

California Cultivator

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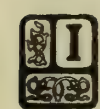
Vol. XLV No. 23

LOS ANGELES: THURSDAY, December 2, 1915

One Dollar Yearly

How to Increase Consumption of Fruit

James Madison, Manager of the Associated Raisin Company, Addresses State Fruit Growers Convention as to Creating Greater Demand for Our Fruits and in Fact All Farm Products. Cooperation Only Solution



I HAVE not prepared a speech but am going to give you a few statistics on the subject of "How to Increase the Consumption of Our Fruits." We should include all products, for if the farmer, who is the originator of all real new wealth, is prosperous, the whole country is prosperous. He is the one who furnishes the necessary money to set the wheels of commerce in motion, which reaches out to every branch of trade, and the farmer can only be prosperous if his products are properly marketed, so that he gets a just return for his labor and investment. There is such a thing as getting too much, and it is a hard matter to regulate it. In most cases it is the reverse, he does not get what he should have and what he should obtain without any injustice or injury to any person in the whole country.

If you can increase the consumption of your fruits you have practically solved the biggest part of that question of making the farmer prosperous, because if the consumptive demand is greater than the supply prices will automatically be raised. The question is this—if prices do increase, does the farmer get that increase? Most of the time he does not. Take your prunes—60 days ago they were worth three to three and one-half cents, today they are worth five and one-half cents. Now why did not Mr. Farmer get this? For the simple reason that he was not adequately posted on conditions, and he cannot be, for the reason that he has only a small circle around him, and the man who deals in these commodities endeavors to find out from all sources as to the available supply.

Government Assisting

The United States government has undoubtedly seen the wisdom of assisting the farmer in marketing his products, to the best advantage for the farmer. It allows the farmers to cooperate, by getting together and forming all kinds of agreements for their products, as long as they do not go beyond that point, forming corporations for controlling certain products. If you undertake to manipulate the packing or manufacturing interests you are up against the trust laws of this country, but so long as you combine your products for the purpose of selling them in a collective way to your own advantage, the government will help you. Therefore the government has seen the value of all cooperative work. It is absolutely necessary if you want to increase the consumption of your fruits. Has any individual thought how he could do the least thing toward increasing the consumption? I do not believe there is any one who can plan or think out a scheme whereby individual work can accomplish anything. The United States and Canada, where we sell most of our products, is a large territory, and an individual cannot afford to go himself, nor can he afford to send out drummers to sell the small quantity he may have, and it is only by large organizations that such work can be done successfully.

Campaign to Increase Consumption

I will take, for example, the Associated Raisin Company, that you have all heard something about. We are expending about \$150,000 annually in

advertising and salesmanship, and I will give you a concise statement of how we have already begun to see the result of that work. The bakers, as you know, all use more or less raisins. When we started our campaign of advertising we thought there was a possibility of our getting the bakers throughout the United States to use raisins in bread and other ways, and found that by sending a man into most any little town, who talked to the bakers about it, that you could get them to buy one, two or three boxes of raisins, according to the size of the bakery. We took that up with our advertising people, and have all this year been working on the bakers throughout the United States. In our opinion they were the largest consumers, and we thought there would be where we could see the increased consumption more quickly than in the homes.

All of you here in the San Joaquin Valley are quite familiar with the overproduction of raisins we were supposed to have. In the spring of 1913, when our association was formed, there were 36,000 tons of raisins in the state. It was not an overproduction; it was an underconsumption that was the trouble. Therefore, we started out with a view of increasing consumption, and the bakers were the ones we tackled first. We started an active campaign last April, and we know this increased consumption, for the bakers were using Thompsons and Sultanas, and also some bulk seeded; but they would buy but a few pounds at a time, whereas now they buy in very much larger quantities, as we are now packing the bulk seeded in 25-pound boxes, and where they formerly bought a pound or two, they now buy by the box. During the year 1914 we sold 62,573 25-pound boxes of bulk seeded raisins. We have this year, up to the first day of November, sold 350,806 boxes; or, during the ten months of the year 1914, we sold 53,000 boxes as against 350,806 boxes in ten months this year. You can of course see that it will take money to cover such a large territory with advertising or with specialty work, and when you figure it out what does it amount to, or what is the difference what the cost is so long as you get results? And it is legitimate results that count. Supposing we are spending \$150,000 a year, that is equal to about \$1.50 per ton on the raisins we handle, and if by spending that money we can increase the value of raisins one-eighth cent per pound, that is \$2.50 per ton, we have made clear for the owners of that commodity above the expense, \$100,000. Therefore, I have always reasoned that we should never be afraid of expense, provided we can get results.

To show you the value of proper marketing, it may interest you to know what difference it makes to the producer in California whether he gets one cent more or less on some of his commodities.

In the month of October there was shipped out of this state 3058 tons of apricots at two cents per pound too low a price, or \$120,000 loss to the apricot growers; beans, 24,830 tons, and, as they have been disorganized for the last two or three years I do not know how much loss they sustained; miscellaneous dried fruits, 4163 tons; figs, 2227 tons; peaches

6266 tons, and how much their loss on peaches was I will leave the growers to answer; raisins, 41,106 tons; prunes, 38,896 tons; nuts, 8679 tons; or a grand total of 129,165 tons of dried fruits and beans that were shipped out of this state in one month.

Cutting Selling Cost

Regarding the shipment of raisins, I will say that it is the largest there has ever been in the history of the raisin industry. Now if by improved methods you would increase consumption so that the consumptive demand would warrant that you obtain an additional cent per pound, the one cent per pound would amount to \$2,500,000. On most all of these commodities one cent per pound one way or the other does not change the retail price one iota. There is where the great trouble generally lies. It is the loss that is sustained between the producer and consumer and as long as the consumer does not get the benefit of the cheap prices, why should not we, "the producers," get all it will stand between the producer and consumer. The very first man you want to eliminate is the speculator. We have absolutely eliminated him out of the raisin business, and he likes me very much for it, I do not think; but he is the biggest enemy of both parties, as he serves no purpose except his own.

The next is the cost of doing business. It has never been thought before that the dried fruit man could do business for less than five per cent commission. When we started our association I advocated three per cent commission, and it was finally compromised on four per cent, a saving of one per cent on the business our company does, or from \$75,000 to \$90,000 per annum. This sum was absolutely wasted before, as the brokers gave it away to the buyer or the wholesaler who put that in his pocket as an additional profit.

Freight and transportation cuts a very large figure in the marketing of your products, and every dollar you can save in that direction the producer gets at least part of. When freights went down about 60 days ago between here and New York we could have raised the price of our raisins one-fourth cent per pound, and they would not have cost the Eastern buyers any more than formerly and the growers here would have obtained the one-fourth cent on account of the reduction in freight.

Educational Publicity

The consumption of our fruits throughout the East is to a large extent a matter of education. I want to say right here that not half enough is known throughout the country about how to use our fruits and how they are produced and manufactured. We have learned this year at the exposition in San Francisco how few had any idea as to how raisins were produced, much less how they were seeded by machinery. It has been the biggest revelation that most of the ladies, especially, have had at the fair, to know that the raisins were seeded in a clean, sanitary way, and how those seeds were taken out. The number of communications and inquiries we received was remarkable, and demonstrates how little the general public knows about our California

fruits. I stopped at one of our packing houses on the way down, and a prosperous farmer, well along in years, said to me: "I notice you invite the raisin growers to come in and see you seed raisins." And I said that we did and asked him if he had ever seen it done. He replied that he never had, that he had been a grower for 25 years, but he had never seen raisins being seeded. If we do not know ourselves how this is done, how can we expect the public to know it?

I am well satisfied that education in all directions regarding the use of our California products would stimulate and increase consumption as much as anything that could be done.

Distributing Recipes

We advertised that we would give away a small recipe book, showing the different ways to use raisins, and shortly after that our mail increased to 2500 or 3000 letters per day, all asking for that book. I am well satisfied that individual advertising and spreading of knowledge about how to use any of our fruits would be very beneficial and increase consumption. At the same time we must give them the very best quality, for our California fruits have been greatly injured by the poor quality—I very nearly said rotten stuff—that has been shipped out of the state by unscrupulous packers. Supposing the housewife bought a pound of peaches and after she got home found they were dark and wormy. She might use them, but she certainly would never buy them again; whereas, if she had gotten a pound of good peaches she certainly would have tried them again. Therefore it is imperative that you get the goods to the consumer in the same way that you would like to consume them yourself. It is not alone necessary to do that once, but you must continue to do it.

If we once get the people started to using raisins in bread and cake, by and by they will get the habit, and will consume more raisins than we are now producing in the state of California. Two pounds per capita in this country would more than consume all we had. We have Canada to supply and we are now supplying the world, owing to the unfortunate war in Europe.

What a fine thing it would be if we could increase the demand for raisins so that we would have to plant more vineyards, and we may see that inside of the next three or four years if we do not have too many of those selfish narrow-minded fellows to contend with, that the Associated Raisin Company will not have enough raisins to supply the demand.

While on that subject I want to say that about the first of July we had about 30,000 tons of raisins in our warehouses and with the biggest crop coming on that the state has ever produced. How would you have marketed them? There was enough here in the hands of the growers to possibly fill the demand, which has generally been about 35,000 tons. Every grower would have fallen all over himself trying to sell his old crop, and his new crop would have brought him nothing, and he knows it. But the situation is this, we will have no more raisins on hand January 1, 1916, than we did on January 1 of this year.

Continued on Page 537

First of all -

Select your Nurseryman

and then take his advice on what to plant

Read what
Prof. Wickson
Says →

Can you tell by sight of a tree or vine whether it has vigor best for fruit bearing or whether it is exuberant or deficient, and do you know what to do in either case? Can you tell by sight of a tree or vine whether it is pruned to have the right amount of bearing wood and is arranged to give the right strength and exposure for best development? Do you understand what recent soil studies are demonstrating about food, texture and content of plant soil, and the effect of these factors on the growth of the tree or vine? Do you realize that the common conception of the tree or vine is wrong? Do you appreciate the fact that the unseen parts of the tree have perhaps a greater and more varied sphere of activity than the top of the tree and demand at least equal cultural consideration? Do you know exactly why ship-pers, cannerymen and other fruit consumers will pay more for some varieties of fruit, less for other and will wholly reject others—all being of the same kind of fruit? Do you realize that there are some extremely dangerous things to do in fruit planting, to blindly imitate and to blindly plunge? To put in or pull out what every one else is putting or pulling, is to be out of the game when the turn comes. To plant with some new thing which no one else is planting, with the idea of getting the start of everybody, may be a wonderful bit in supplying a tourist hotel, but it is as deadly as solitary confinement in connection with the general commercial demand. P. R. P. 10-23 1915

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Citrus

and

Fruits

OBSERVATIONS BY EASTERN EXPERT

By Geo. T. Powell



It was my pleasure and privilege to spend a little more than two months, from February to May, in a careful study of the soil, climate, productions, and particularly the citrus industry of Southern California. During that time, I went over 4000 miles of the state by auto, which gave a most favorable opportunity to study conditions with considerable minuteness.

The Soil

I have never gone over an equal territory in which the soil interested me more in its wide variation from sand to heavy clay, adobe, silt, gravel, loams of differing character and some very stony. It is these soil variations that make possible the great variety of products that are grown in the state.

While the climate has much to do with the growth of many kinds of trees and plants, the soil is a large and determining factor affecting their best development.

As in other sections of our country where there are soils of differing character, I observed that some owners of land were making the mistake of trying to produce certain crops that were not suited to the soil upon which they were being grown. This was particularly noticeable with the citrus fruits which have been planted over a large territory in which these soil variations occur. In a few sections the orange and lemon plantings of long standing indicated a condition of decline, the cause for which is not fully understood. This may be a possible result following the production of one crop continually over a long period of time.

The growth of a certain kind of trees producing fruit for a third of a century or more under one system of culture takes out of the soil not only the plant food essential to the trees and fruit, but the physical character of the soil becomes so changed that even though it may still have an abundance of plant food it may not be sufficiently available for the trees to fulfill properly their function of production.

In the plant world rotation is a law of nature, one species following another, each taking out and returning to the soil different constituents without leaving the soil depleted.

Most of the soil of California is practically inexhaustible, so richly is it endowed with mineral plant food, but its one great need, as I studied it, is organic or vegetable matter. This is best supplied by animal manures, but these are not obtainable in sufficient quantity to meet the requirements of so large an acreage under citrus culture. Cover crops for green manuring were very generally observed. Some of these grown, as rye, barley and buckwheat, are not so valuable as the clovers, beans, peas, vetch, alfalfa and others of the leguminous family. While the first mentioned do add some vegetable matter to the soil, they do not produce the same effect in the fermentive processes as animal manures and the legumes which stimulate active bacterial life in the soil. These bacteria produce marked beneficial effects upon the soil mechanically in addition to making more available the mineral constituents with which the soil is abundantly supplied.

The Melilotus clover was found growing in many orchards. As a cover crop it seemed most promising. It will not only make a large amount of vegetable matter, but its deep root penetration will prove of exceptional benefit to the soil. There is no doubt but that this plant will be found to be of high value followed by the increased quantity of fruit produced, as also in its improved quality.

The purple vetch was also seen growing in several places with prom-

ise of large value as a cover crop. The discovery of the ability of the leguminous plants to abstract nitrogen from the air and build it up in the soil through the agency of their roots would have been likened unto a miracle in olden times. California need never have fear of a shortage of nitrogen which may always be had abundantly at the lowest possible cost through these and other leguminous plants.

While making examination of the soil in a number of different localities, I was quite surprised to find in some instances a heavy lifeless soil with little humus in it, yet the soil was well supplied with plant food to a depth of 30 feet or more. The orange and lemon trees in the soil showing this condition were not thrifty, the foliage was not natural, while many trees were producing little or no fruit. Without strong and luxuriant foliage but little fruit may be expected and that of low grade in quality.

Irrigation

With an annual rainfall ranging from ten to 30 inches in Southern California, with a semiarid climate, precipitation being mainly in the winter months, an artificial system of supplying water has to be adopted for the growing of crops. This has advantages and it also is attended by some disadvantages. The advantages are in the insurance of crops which may be supplied with water when they most need it. The disadvantages are in results that follow from the unintelligent use of the water.

The problem that arose most prominently when studying the irrigation system was, with the very great extension of the citrus planting, together with largely increased areas of market gardening, alfalfa and other crops, where is the water to be obtained with which to meet this enormous future demand for it?

There was evidence that too much water was being used by some growers, for in some instances 12 inches below the surface the soil was as hard as much of the hard-pan formation that is met in sections of the Eastern states.

Under such condition the winter rainfall does not sink in the soil very far. The subsoil is constantly dry and is slow in taking in much of the water. The winter rain not being taken up rapidly enough by the deep dry subsoil sweeps over the surface, making at times wide rivers which carry away much valuable soil from the beautiful valleys over which the water is forced to flow.

By the shallow plowing that in many instances is done, especially where the soil is of a clay type, with more or less of silt, the soil becomes hardened under the plow, almost impervious through puddling; the water being unable to sink into the subsoil, and consequently there is less to come up later on by capillarity. The roots of trees and plants require air as much as water. They are deprived of air and the benefit from oxygen under a hardened soil, the same as from being submerged in water.

It is the history of all countries where irrigation is practiced that in time soil troubles arise which are the result of the unintelligent use of water. Some most interesting work was met where heavy leguminous crops were being plowed in to a depth of 16 inches, with less water applied but more fine surface tillage given to conserve the moisture in the soil.

Very heavy crops of clover were in some instances being disked into the soil, while a thick layer of the clover was piled underneath the orange and lemon trees, and a less quantity of water was applied without tillage.

The aim was to form a surface mulch that would hold the water and allow it to sink more slowly and more deeply into the soil, while it would prevent too rapid evaporation. The object of this experimental work was



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to conserve the water from the winter rains over a longer period, when it was thought less would be required from irrigation. As the population of the state increases and larger areas of soil are put under cultivation, this very intelligent experimental work by some of the large citrus growers to determine if some of the difficulties that arise from the system of artificial irrigation may be averted, will prove of interest and without doubt of much value to the industries of the state.

It would be a very wise policy for the state to inaugurate a system of impounding the flood waters of the winter for future use, which now do great damage to many thousands of acres of most valuable soil, while entailing upon taxpayers an enormous cost for the reconstruction of damaged roads and bridges.

(To Be Continued)

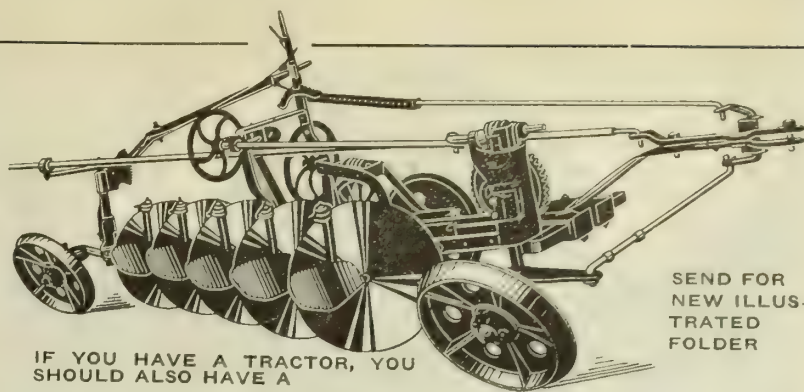
CARRYING THE WAR TO CONGRESS

The citrus canker committee, with headquarters at Tampa, Florida, is urging citrus growers the United States over to join in the fight against citrus canker. It appeals for help on the ground that the canker is a problem too great for the states of Florida, Louisiana and Texas to handle and that it is a question of nationwide interest, for unless it is brought under control the citrus industry of the country is jeopardized. California has none of this trouble as yet but we believe citrus growers and all who value the welfare of the state are with Florida in this fight. To the end that widespread interest may be created in a liberal appropriation by the government to enable the department of agriculture to take up the fight, and that congressmen of this state may be informed, it is urged that Californians write to members of the agricultural committee and to our own congressmen.

D. C. Gillett, chairman of the committee, writes: "We must have this appropriation; we must impress our need upon the secretary of agriculture and also the agricultural committee of congress. We want to deluge them with a flood of bona fide letters from every friend of the citrus industry. We therefore request you to write in your own way 23 short letters, one to the secretary of agriculture at Washington, Hon. David F. Houston, and one to each member of the committee on agriculture, and one to Hon. Champ Clark, speaker of the house. You need not dwell on the method of eradication or on the amount required to accomplish this purpose. Simply present them with the fact that federal aid is the only power available to eradicate citrus canker from the United States of America, and ask them to vote in favor of an adequate appropriation to accomplish this purpose when the matter is presented to them for consideration."

The members of the agricultural committee may each be addressed, "House Office Building, Washington, D. C." They are: Honorable Asbury F. Lever, Gordon Lee, E. S. Candler, Jr., J. Thomas Heflin, John A. Maguire, Thomas L. Rubey, James Young, H. M. Jacoway, Ralph W. Moss, John V. Leshner, Michael K. Reilly, Benjamin I. Taylor, Dudley Doolittle, Gilbert N. Haugen, James C. McLaughlin, Hon. Willis C. Hawley, Joseph Howell, Henry T. Helgesen, Charles E. Patton, Sydney Anderson, J. Kuhio Kalaniana'ole.

In addition, the members of congress from California who may be addressed House of Representatives, Washington, D. C., are: Wm. Kent, John E. Baker, C. F. Curry, Julius Kahn, John I. Nolan, J. A. Elston, Denver S. Church, Everis A. Hayes, Charles H. Randall, W. D. Stephens, Wm. Kettner.



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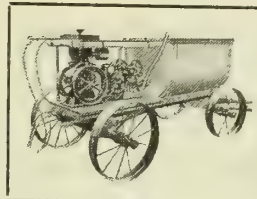
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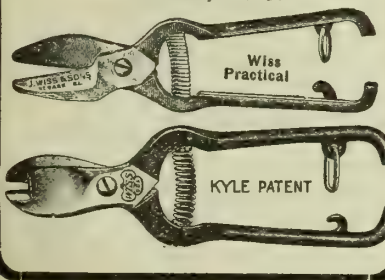
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Written for California Cultivator
By J. G. Berneike



VERY season presents its own difficulties of harvesting. The three past seasons illustrate this, at least as applied to Orange County. In 1913 harvesting was difficult because of damage done by aphids and sunburn; in 1914 it was easy because the crop was light and we had no injurious influences. Almost every nut was good. In 1915 blight, sunburn and codling moth have given us the most difficult tasks of sorting out culls that perhaps we ever had.

The writer has a small orchard of ten-year-old trees, said to be grafted. The nuts from the different trees are, however, by no means uniform in type and it becomes necessary to select carefully those that conform to the standard of budded nuts and leave out those random sizes and shapes that would fall into the ordinary soft shell class. This necessity led to a change in the ordinary method of harvesting, and the experience derived therefrom prompts some suggestions for the benefit of walnut growers.

It might seem best to make these suggestions shortly before harvesting begins; on the other hand I write them down and present them while they are fresh in my mind from the harvesting experience just passed. If they are considered worth while the interested walnut grower will file this copy of the Cultivator for future reference and meanwhile will have time to consider carefully whether improvement in his own method is not desirable and practicable. The high standard which must in future be maintained for California walnuts, if shipped under a guaranteed brand, in order that prompt sales of the entire crop (which is constantly increasing) might readily be made, makes it absolutely necessary to find the best method of harvesting which will help the grower.

Beginning then with my own orchard: My crop as a whole did not reach the standard of budded nuts. Yet there were many trees that did. In order to get the advantage of the higher price for budded nuts, and not have too much difficulty in sorting, I must keep the crop from each tree by itself until sorted. This was done. A separate sack was used for each tree, and when emptied on to the walnut tray for drying and sorting, short boards were placed across to hold the crop from each tree separate. The sorter was a very intelligent woman who kept a sample of standard budded nuts before her and thus could easily draw the dividing line. More than was looked for was accomplished by this method of harvesting. The difficulty of sorting the walnuts to bring them up to the required standard for cracking test was greatly lightened. In the first place every walnut which showed a stain was thrown out, also every one with a hole in the shell or the stem end, and every one with hull sticking to the shell. But this sort of culling proved insufficient. It might suffice in some years, and did in 1914 when even a large per cent of the culls were good nuts.

To satisfy scientific curiosity the sorter opened many culls to note the relation of the outward signs to the condition of the kernel. She cracked many suspicious looking nuts that could not easily be taken for culls. And then she applied the cracking test to perfectly good looking nuts with most surprising results. The finding in brief was this: Many perfectly good looking nuts were culls. Many suspicious looking nuts on the other hand had fine kernels. After this the cracking test was applied to each separate lot as it was reached. And many a fine looking, good sized

lot was dumped into the off-grade or culls as a result of the test. As ordinarily handled these nuts would have gone into the merchantable class. Had this been done in this instance it would probably have so greatly lowered the cracking test applied at the walnut house that the entire crop would have been rejected. Resorting would have been impossible because not even the most expert handler of walnuts could have told any difference by outward appearance or weight of the nuts.

Culls caused by blight were easily picked out. Culls caused by the larvae of the codling moth were harder to find, excepting those which either showed a dark stain or a distinct hole in the stem end or shell. Some of these culls will escape the most expert sorter, even if every nut is individually handled. This is the nut which still holds the worm, while the nut with the large hole shows the worm has escaped.

Culls from sunburn were the hardest to recognize, and in fact it was impossible to recognize most of them. Our sunburn culls this year were different from those of other years. In other years they have been caused by burning the hull fast to the shell during one or perhaps two burning hot days. This year the injury came during the last rather hot week of August. The hull was black and thinned out on the sun exposed side but easily came off the shell, leaving a very slight stain, if any. The kernel was turned slightly amber on the burnt side but was not in the least shriveled. The weight of the nut seemed normal. At harvest time many of the kernels showed that a mold had started on them, and the nuts of many trees rejected by my sorter showed the same moldy condition without the slightest outward indication of it on the shell discoverable by the naked eye. While growers seem to agree in ascribing this condition to the hot week in August, yet we have so far received no scientific explanation for it.

This year's and past experience leads me to adopt this as my future plan of harvesting: Harvest the crop as promptly as possible. Pick up good and bad under each tree and keep the crop from each tree separate. Do no shucking in the orchard but let it be done in the walnut camp. Begin culling with the unshucked walnuts. A cracking test at this stage will show what nuts to throw out, whereas if shucked there might be nothing to indicate culls. In case of a large orchard I would send a man through the orchard, following the shaker, to make a cracking test under each tree and tag the tree. Pickers might then be assigned to pick up under tagged and untagged trees separately. Sacks may be tagged to correspond with tree tags showing cracking test. This plan may seem a little troublesome, but in the end will save time and money.

Having culled the unshucked nuts, all worthless culls may be burned up. This may help to destroy blight and the codling moth. The shucking can be done by hand or by a machine huller. Sometimes the dry huller and sometimes the wet huller will prove the best. The drying must be promptly and thoroughly done. To expose the nuts to the hot sun causes many "splits"; to expose them to the night fogs causes mold and slow drying. An air blast for drying would seem to be ideal, but I have not yet heard of any grower experimenting in that line. Exposure to the sun with very frequent stirring for one or two days would cause but little splitting, but the fog must be kept off at night. Molding of nuts on the drying trays would thus be largely prevented. In no case must they be piled thick and left without stirring.

I dry mine in a large barn loft which has ample openings for air, and spread them thinly at first. After shucking and drying they must be

culled and sorted once more to take out what escaped at first. Thereafter, to keep tab on the bearing of each tree and rule out robber trees, and also to discover if possible why the crop of one tree shows poor nuts and that of another tree shows good nuts, I expect to number all trees and provide numbered tags for each sack and keep a record of each tree's performance.

PROTECTION OF DRIED FRUIT

Recent investigations have shown that the loss to the dried fruit industry from the attacks of insects is sufficiently great to make it nearly as desirable to put up the fruit in sealed packages as it is in the case of cereals. No exact figures are available as to the extent of the loss because the injury is usually noticed for the first time by the retailer or consumer after the product has been widely distributed. The retailer is inclined to be reticent about the amount of damaged fruit in his possession, and unless the damage is considerable, prefers to stand the loss rather than return it to the wholesaler. The total damage however is unquestionably considerable.

The two insects that do most of the harm are the Indian meal moth and the dried fruit beetle. An investigation carried on in California by the department of agriculture has shown that the fruit may become infested with these insects in the field, in the packing house, in the warehouse and in the grocery store. Adequate protection against such infestation therefore must consist first in the sterilization of the fruit before it is packed, and secondly in the use of cartons through which the insect cannot penetrate.

Dried fruit is usually processed in some manner before being packed in order to make its appearance more attractive. Figs, for example, are frequently dipped in boiling brine, and this in itself is sufficient to destroy all insect life. Other fruits, such as the peach, are dipped in cold or lukewarm water. In such cases the addition of a belt heater is suggested as an effective means of destroying insects. By running fruit in a series of belts through a chamber, the temperature of which is maintained at 180 degrees Fahrenheit, satisfactory sterilization can be secured. By adjusting the speed of the belt the time that the fruit remains in the heater can of course be easily regulated. The heater should be so arranged that the fruit is delivered into a screened packing room, which will insure it against contamination before packing.

The greatest part of the infestation occurs after packing, and in consequence the sterilization of the cartons is of great importance. These should be sealed after having been filled, and before they are placed in the warehouses or cars. In this way the fruit is not only protected against infestation, but is preserved for long periods in the condition in which it was packed. Fiber board packages have been found satisfactory containers for the fruit, and sealing can be done in several ways. Machines have been invented, for example, which will rapidly seal small packages of dried fruit and at a moderate cost. One machine designed to wrap cartons 8x3x3 inches will wrap and seal a minimum of 10,000 a day at an estimated cost, including all material and the wages of the operator, of less than \$1.00 a thousand. When the output is increased to from 15,000 to 20,000 cartons a day, the cost will be from 80 to 90 cents a thousand. At this rate it is estimated that the machine will pay for itself in a comparatively short space of time and that the manufacturer will be able to deliver a sealed product which is practically safe from all danger of infestation. Further details in regard to this subject are contained in Bulletin No. 235 of the United States department of agriculture, "The Control of Dried Fruit Insects in California."

ARIZONA FARM BUREAU MEETINGS

Farm bureau meetings in Cochise and Santa Cruz Counties, Arizona, are announced by Adviser A. L. Paschall of San Simon as follows: Douglas, December 2; Bisbee, 2; Naco, 3; Garces,

3; Elgin, 4 and 6; Canille, 7; San Rafael, 8; Patagonia, 9; Sonoita, 11; St. David, 13, 14, 15; Benson, 16 and 17; Cochise, 18; Willcox, 18 and 20; McAlister, 21 and 22; San Simon, 24 and 27; Bowie to Willcox, 29; Willcox, 30 and 31.

With this announcement are sent out these thought provokers:

Farming to be successful must be done upon a community basis. There are great undeveloped agricultural resources in Cochise and Santa Cruz Counties. There are also excellent home markets.

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Do you know how much it has cost you to produce your crops and which one has given you the best returns for the cash and labor invested?

Let's put farming upon a business basis and a community basis. Come to the meetings and let's plan together and decide on the best farming methods in your locality.

Do not fail to attend the farmers' short course, at the University, January 3-15, 1915. This will be worth much to you.

PRUNING DEMONSTRATIONS IN STANISLAUS

The Stanislaus County farm bureau will hold a series of pruning demonstrations under the direction of the farm adviser C. M. Conner, at the various local farm bureau centers, beginning December 9 and continuing until December 16. Two experts will be furnished by the university for this work; one to prune trees and another to prune vines. The demonstration will be held on ranches selected by committees of local farm bureau centers. As many different varieties of trees and vines will be pruned as opportunity offers. Demonstrations will be held according to the following schedule:

Claus, Thursday a. m., December 9; Riverbank, Thursday p. m., December 9; Oakdale, Friday, December 10; Empire, Saturday a. m., December 11; Modesto, Saturday p. m., December 11; Hughson, Monday a. m., December 13; Denair, Monday p. m., December 13; Wood Colony, Tuesday, December 14; Keyes, Wednesday a. m., December 15; Mountain View, Wednesday p. m., December 15; Paterson, Thursday, December 16.

At these demonstrations the pruner will illustrate his talk by actually pruning the trees, giving his reasons for making certain cuts and explaining how the young trees may be trained in order to obtain desired results.

WEST SIDE LANDS IN KINGS COUNTY

The Cultivator representative at Hanford writes: "The West Side lands of Kings County, 35 miles west of Lemoore, are now being cultivated. Over 20,000 acres of good land, which has lain barren for lack of water, is now growing fine crops of olives, alfalfa and beans. It is also suitable for rice culture.

"This vast empire is blooming like



Mr. Murray is Pleased at the Quantity of Water From His Well.

the rose in many spots, due to the energy of Hanford men who have confidence in the soil and propose some day to establish a thriving city eight and one-half miles from Huron and 30-odd miles west of Lemoore.

"The pioneers in this movement are David Murray of the Hanford Ice Company; C. M. Gifford, the olive king of

San Diego, who already has planted 160 acres of olives and will have bearing trees in three years; Superintendent of Kings County Schools J. E. Meadows, who has 25 acres in alfalfa, and the Ascolano Olive Company, which has 95 acres planted to olives. Mr. Meadows is farming 640 acres and has put in a well and pumping station that is pumping 500 to 600 gallons per minute.

"The Murray ranch has 20 acres now in olives and the fruit compares favorably with any grown in California. The Gifford large Mission olive is planted exclusively in this section. Mr. Murray has solved the water problem and his pumping plant is a model one. He is pumping seven and one-half second feet. The Nelson ranch in this district has grown a large acreage of beans and the owner will later go in for olives and 'cots. The prediction has freely been made by land experts that this West Side domain of Kings County is destined to be the olive grower's paradise. Wise nurserymen and packers, like the Giffords, have taken time by the forelock and will have an olive orchard that, will possibly be second to none in the state.

South America is buying Irish potatoes of California growers this year. Formerly these countries bought potatoes in Europe, but the war shutting off that source, they now turn to the United States.

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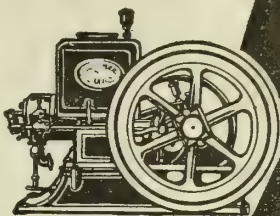
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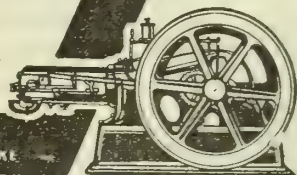
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The Lawn and



Flower Garden

THIS MONTH

SPRING blooming bulbs should be in the ground at once. Iris which has not been planted as yet should be put into the ground during December at least and be making root for sending up blossom stalks. Early blooming gladiolus should be planted and the dwarf, or nana type, which should have been planted a month or more ago, may still be put into the ground with reasonable assurance of fair results. Gladiolus, by the way, should be planted in succession, say two or three weeks apart, so as to secure blossoms during the entire summer. They may be planted as late as June. To hold bulbs that late, however, they must be kept in a cool, dry place.

Watsonias planted a few weeks ago and now up should be given an abundance of water. If largest and finest of blooms are desired a bit of commercial fertilizer will prove beneficial.

Dahlias which have been left in the ground should be taken up at once and stored in a cool, dry place for spring planting.

From "The Garden Beautiful" December calendar we quote: "The anemone, narcissus, or daffodil, single and double, in shades of orange, yellow and white, the Dutch hyacinth, tulip, Spanish iris, early and late flowering gladiolus, lily, Roman hyacinth, ixia, ranunculus, sparaxis, freesia, ornithogalum (Star of Bethlehem), cyclamen, montbretia and German iris should all be planted immediately."

This is planting time for roses and all shrubs. The tops are dormant, or will soon be with this cool weather, and they may be reset with bare roots providing the tops are well cut back. Cuttings may be made of roses during this month, also of lemon verbena and many other flowering shrubs. Another plant which grows readily from cuttings is the syringa which gives an abundance of beautiful white bloom in the later spring months.

But above all, this is the month for getting the soil ready for planting in the warmer spring months. Spade in the manure and wet thoroughly, then keep weeds hoed down during the cooler months. If the lawn has been given over largely to devil grass by this time it is turning brown. A sprinkling of nitrate of soda will help the blue grass to come through and make better appearance during the cooler months. Raking in of well-rotted stable manure is advisable at this time. The raking will discourage devil grass and give the blue grass a chance.

A few flowers of a kind, grouped loosely in a vase, make a much prettier bouquet than a large number crowded together. Do not put too many colors together; the effect is better with only one or two.

No home is complete without a flower and vegetable garden, no matter how small.

THE GLADIOLUS

The gladiolus is becoming more deservedly popular each year, its beautiful flowers of such wonderful lasting qualities placing it above many other cut flowers. By merely trimming a small portion of the stem away each day the same bouquet will last over a week. It may be had during a long blooming season by different plantings at intervals of two weeks.

This flower succeeds everywhere and responds so quickly to good treatment and requires so little effort that there can be no excuse for not producing good flowers. According to the varieties the bulbs will produce flowers in from 65 to 90 days. Well rotted stable manure is one of the best fertilizers and should be spread over the land in the fall and plowed the following spring. Plant from three to four inches deep, the larger bulbs the

Small Fruits

Vegetables

THIS MONTH

SPADE in the manure and get the beds ready for spring planting of beans, melons and others of the less hardy vegetables which should not be put in the ground for some time yet. In fact, a heavy mulch of stable manure, with occasional wetting to wash it into the soil, proves beneficial. But notwithstanding this is one of the



Hoes Set for Two Rows at Once

colder months there may be planted a number of the hardier plants, such as Broad Windsor beans, the chayote, which is becoming better known each year, kale, mustard and of course all of the hardy plants, carrots, cauliflower, cabbage, chard, endive, lettuce, onions, radish, spinach, etc.

This is a good month also for planting strawberries. In securing sets be sure that they come from plants which have not yet borne a crop of fruit. The producing of strawberry plants is an art in itself and care should be taken that they are not only from strong parents but from young stock as well.

Rhubarb, asparagus and horseradish should also be planted this month.

There are a few sections where hill-side locations give proper air drainage and there is little danger of January frost where it may be wise to plant potatoes. Of course one may be caught by the frost but if not the reward is large for such early stuff. Probably the best variety for planting at this season is the Early Rose.

If one has a few old sash or, still better, a regularly constructed hot bed, seed may be sown for tomatoes, chilis and others of the more tender plants. But even where the hot bed is used only the most favorable locations will stand for earliest planting of these young, tender plants. In the absence of the glass good results have at times been secured by the use of muslin.

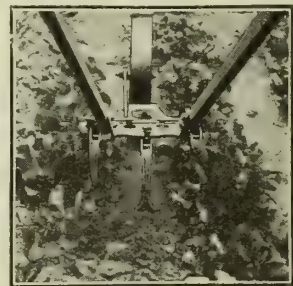
DAMPING-OFF

This is largely a disease of seedlings common in greenhouses, but also found in gardens and fields. There are numerous damping-off fungi, all of which occur within the soil. They attack the young plant at the ground line, first causing a watery appearance of the stem. Ultimately the attacked tissue becomes so weak that the plant falls over. Subsequently the whole plant may be invaded by the fungus. The development of the damping-off fungi is favored by warmth and abundant moisture in soil and air. The crowding of plants may bring about the latter condition. Control consists of keeping the soil cool, reducing the amount of water applied, frequent stirring of surface layers to facilitate aeration, and the prevention of crowding the plants.—W. W. Robins, Colorado Agricultural College.

HINTS ON POTATO SEED SELECTION

Good seed is a determining factor in the production of maximum crops of potatoes.

Good seed may be obtained by the



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tuber-unit and hill-selection methods of selection through the elimination of unproductive and weak plants. These methods are explained in Farmers' Bulletin 533, "Good Seed Potatoes and How to Produce Them."

Like produces like. If tubers from unproductive or weak plants are used, a similar harvest will be reaped.

All tubers showing marked discoloration of the flesh should be rejected.

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TO THE PEACH GROWERS

I have recently been appointed by Governor Johnson, market director, to carry out the spirit and provisions of Assembly Bill No. 318, passed by the last session of the legislature, which calls upon the market director to do anything and everything that can be done to aid the farmer to get a living price for whatever he has to market, and the consumer to get his food products at the lowest price possible.

It is not difficult to see that this is a heroic task, and that no one man alone can hope to accomplish the desired ends. To attain the object in view it is imperative that the hands of the market director be upheld by the farmers of the state, and this they can do in no better way than by forming the strongest kind of organizations.

It can easily be understood how impossible it would be for a market director to deal individually with untold thousands of farmers scattered in all parts of the state, that his only hope lies in dealing with strong organizations.

My plea therefore is that farmers in every branch of farm production should organize, if only for marketing purposes, in order that the market director may be better enabled to succeed in the work undertaken.

I must make an especial appeal to the peach growers to organize, because their position at this time seems to be the worst among the farmers of the state. The market price for their

the proposed association and to give to it his earnest and hearty moral and financial support.—Harris Weinstock, Market Director.

INCREASE CONSUMPTION OF FRUIT

Continued from Page 531

And why? Because the buyers have confidence in this organization. They are satisfied that we have named a reasonable price at which they can sell our goods and make a reasonable profit for themselves, therefore they are not afraid to buy, as they know the price will not be lower tomorrow than it is today. We have maintained prices and that is one of the strongest points in marketing generally. I have been in business for 25 years, and my experience has been that on a declining market or unsettled conditions you cannot sell anything, for the buyers are afraid that tomorrow their neighbors will be able to buy for a little less.

Staple Market

I was East a few months ago and called the wholesalers together in several of the larger cities and asked them what they thought about our prices and they invariably said this: "We do not care what your prices are as long as you maintain them." That tells the tale. The wholesale men are in business for profit. They do not care for one-half cent or one-quarter cent, as long as they can make their profit and as long as the retailer is

MUCH NEEDED

Prof. L. H. Bailey, author of "Farm and Garden Rule-Book", many other valuable rural manuals, and editor of "Standard Encyclopedia of Horticulture", "Cyclopedia of American Agriculture" and the McMillan Rural Science Series, writes:

"Returning from an absence I find 'The Garden Beautiful in California'. I am very glad that you have put this account of your experience together and have made it available for people in California and elsewhere. It impressed me as being a book of practical value and much needed in the new and rapidly developing field of gardening in Southern California."

product is and has been and unless some radical step is taken, is likely to continue to be, below cost, which of course must mean ultimate ruin to them.

A group of public spirited citizens and peach growers, realizing the seriousness of the situation are giving without hope of reward other than the satisfaction that comes from rendering a public service, of their time, their means and their energies, to organize a California Peach Growers' Association. Their progress has not been as rapid as the end in view justifies.

In my investigations thus far of the peach situation I find that many growers hesitate to subscribe to the proposed organization, not because they do not keenly feel the need of organization; not because they do not realize that if the present situation becomes permanent ruin to the peach industry is inevitable; but because they hesitate to place the marketing of their crops for a period of perhaps seven years into the hands of seven directors at this time unknown. It is the fear that these seven unknown directors may not prove fit that restrains them from taking the only step which it is possible for them to take in order to save the peach industry of California from ruin. To meet and to overcome this fear, after consultation with Governor Johnson, it has been suggested that the trustees of the proposed association elect as one of the seven directors a state representative to be nominated by the market director, that this state representative sitting on the board of directors with a full voice in its management, shall keep the market director advised of the conduct of its affairs by filing with him copies of the minutes of the directors' meeting, and of any weak spots which may develop in the management of the association: That it shall then become the province of the market director to investigate the affairs of the association; if need be, to hold a hearing and make findings, and to give such findings the widest publicity, in this wise tending thoroughly to protect the absent stockholders. In the interest of the California peach growers, and in the interest of the welfare of the state, I strongly urge and recommend every peach grower in California to join

interested in selling these goods. The great trouble has been that raisins were considered a luxury and not a common article of food like sugar and flour, and the retail prices have often been prohibitive. We have been advertising that the consumer should be able to buy raisins at a certain price, and if he could not get them at that price, to let us know and we would see that he did get them.

Maintain Standard

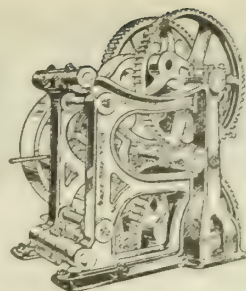
I can see no stronger way to increase consumption than by organization at home. If you can manage to get your product under control you can eliminate the inferior part of that product. There are ways and means that it can be used. It would be better to feed it to hogs than to place it on the market. For instance, we have a few raisins left from last year which we could sell at a lower price, but we have refused and set them aside, and some day they can be used for mince meat and manufacturing purposes.

Help for Cooperators

I am much interested in cooperative work and am very glad to see that the governor appointed a commissioner to assist in improving marketing conditions. It is most vital and important to see that the farmer gets the most satisfactory return for his products, as he puts the money in circulation which makes good times for all. It will not help your marketing to go out on a big campaign for once. You have to work constantly and continually to keep the thing before the consuming public, and always try and improve the quality and educate them how to use the article you are marketing.

If at any time I can be of any assistance to you in organizing, or furnish you any information which we have obtained at the expense of both time and money, I will be very glad to offer my services, as our board of directors approve of my assistance wherever I can to spread the gospel of cooperative work.

In conclusion would strongly recommend organization so that you may control your own products. You can utilize the methods and means I have mentioned, and thereby increase your sales, which will automatically raise the price of your products.



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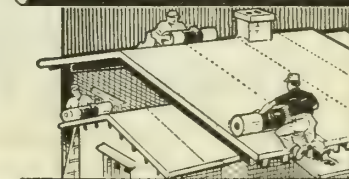
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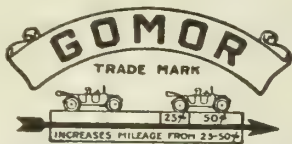


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Economics

on the Farm

WHEN TO INVEST



It takes courage fortified by confidence to enable farmers to make permanent improvements on their farms, buy sires and dams suitable for building up their flocks and herds and make investments in other things that increase efficiency and comfort in times of financial stress, yet sound business judgment generally requires that such investments be made.

Men who have accumulated fortunes in business and attained independent incomes from very obscure or modest beginnings are generally the men who have invested when times were dull and when they saw great opportunities. The fact that times were dull made the investments more valuable. Their neighbors were afraid, possibly, to invest when opportunities were afforded and these are generally the people who have been outstripped in the race for financial independence. The fact that one has little cash does not always mean that opportunities for investment in equipment should be ignored. There is a way, usually, for men of sound business judgment to finance their operations.

Expenses incurred in permanent improvements and in equipment for productive purposes should be considered as investments from which income will be received. If the investment pays only a small dividend each year for many years it may be profitable. The mistake of charging such expense to the income the first year should not be made. If the investment is judiciously made the cost is not an expense at all, but an investment to increase the income.

Every farmer must use his own judgment in buying equipment. But it is a fact that many of us are too conservative for our own good. We have been taught to fear debt, to buy nothing that we could do without and to "pay as you go." This may be sound for some, but it is a handicap to others. The farmer that has confidence in his farm and his ability to manage it profitably needs no restraint or advice in his investments. He is a master of his own affairs and is looking for investments in equipment, even in times of close financial affairs.—Texas Farm and Ranch.

TARIFF COMMISSION

We have a letter from Congressman Wm. D. Stephens of the Tenth district of this state in which he refers to bringing up at the coming session of congress the bill—or one very similar to it—introduced at the last session, which provided for the formation of an expert tariff commission. Congressman Stephens writes:

"I favor a protective tariff that shall equalize the cost of production at home and abroad, give a reasonable profit to the American producer, insure permanent employment to American labor at good wages, and restore prosperity to the business men of the nation. For many years I have advocated an expert tariff commission. Such a commission with right or power to recommend would take the tariff out of politics."

To give an idea of the scope of the former bill which will be the basis of the new bill to be introduced December 6 we may quote:

"That a commission is hereby created and established, to be known as the tariff commission, which shall be composed of seven commissioners, who shall be appointed by the president, by and with the advice and consent of the senate. Three commissioners shall be chosen from the district composed of the states of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Ohio, Indiana, Michigan and Wisconsin. Two commissioners shall be chosen from the district composed of the states of New Jersey, Delaware, Maryland, Virginia, West Virginia, North Carolina,

South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, Kentucky, and the District of Columbia. Two commissioners shall be chosen from the district composed of the states of California, Oregon, Washington, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Minnesota, Iowa and Missouri."

The first commissioners are to be appointed for four, five, six, seven, eight, nine and ten years respectively, successors to be appointed from the districts in which commissioner's terms expire. Not more than four commissioners shall be members of the same political party. The commissioners shall give their time exclusively and may be removed for inefficiency, neglect or malfeasance in office.

"Whenever called upon by the president, either house of congress, the ways and means committee of the house of representatives, or the finance committee of the senate, the commission shall recommend such tariff legislation as in its opinion will accomplish the results specified in the call."

FARMERS' LEAGUE

At the annual meeting of the Farmers' Protective League of California, held in San Francisco the following officers and directors were elected for the ensuing year:

President, F. B. McKevitt, Sacramento; first vice president, L. F. Graham, San Jose; second vice president, C. C. Teague, Santa Paula; directors, Geo. H. Cutter, Sacramento; G. H. Hecke, Woodland; Kent S. Knowlton, Bakersfield; C. A. Bode-well, Jr., Petaluma; F. A. Hutton, Dixon; C. N. Hawkins, Hollister; B. F. Walton, Yuba City; secretary and manager, Arthur Dunn.

To the end that farming interests shall receive recognition at the hands of the legislature, the following resolution was adopted unanimously: "Moved, that the organization be pledged to use every honorable endeavor to secure the election to the legislature of men who are friendly to the agricultural interests of the state."

Among the measures to be worked for will be a bill creating a department of agriculture in California by consolidating about 14 existing departments and commissions at present performing similar duties in many instances. Such a bill, urged by successive fruit growers' conventions, was introduced at the last session of the legislature, but politicians declared openly that it would not pass because "too many jobs were involved." The bill was lost on committee files.

Although defeated at the last amendment election, another rural credits amendment will be advocated and efforts made to educate the electorate residing in cities as to the purpose of the measure. All efforts of organized labor to foist a universal eight-hour law on California will be opposed vigorously.

Organization of league branches is going on in several counties. Some of the branches are saving money for their membership by purchasing commodities at wholesale rates.

Forty states of the Union have taken some legal action toward safeguarding the sanitation of public school buildings, according to a bulletin on "Schoolhouse Sanitation," just issued by the bureau of education of the United States department of the interior. "Probably nine-tenths of the existing regulation of this sort has come within the past decade," declares the bulletin. "Each state profits by the experience of 47 others. A law passed in one extreme of the country today is copied next month or next year by a state 2000 or 3000 miles distant."

General Agriculture



RED SPIDER ON HOPS

WILLIAM B. PARKER of the United States department of agriculture at one time made an 18 months' investigation of the red spider, *Tetranychus bimaculatus* Harvey, on hops of the Sacramento Valley, which he reported in Bulletin 117 of the bureau of entomology. Regarding the life history and control measures, he says: **Life History**

The eggs are deposited singly and loosely amongst the webs and upon the underside of the leaves. From ten to 450 may be found on a single leaf. The period of incubation varies from four and one-half to ten days according to the state of the weather, and the period of maturity from eight to 16 days. Sexual differentiation takes place after the second moult, but copulation does not take place until after the third. Parthenogenesis has been observed to take place, the bulk of such offspring being males.

The mites live on the underside of the leaves, protected by their webs, and gradually migrate from the lower leaves as they become damaged to the higher portions of the vines. They do not hibernate on their hosts, but upon violets, mallow, *Malva passiflora* and morning glory *Ipomaea*.

Experiments showed that the average female mite can travel over 211 feet of leaf surface in ten hours and from ten to 60 feet over soil according to the texture. The writer has observed this mite to be almost omnivorous with regard to its host plants, and gives a list of 43 greenhouse and ornamental plants, 41 field plants, shrubs and trees, and 19 herbaceous plants occurring near hop-fields, all of which this mite has been found to attack. From the wide range of plants in this list it seems probable that this pest is able to thrive on any form of vegetation in which the pubescence of the underside of the leaves is not so heavy or luxuriant as to prevent direct attack on the leaf tissue.

The first symptoms of the attack are the appearance of yellow spots on the leaves. As the mites increase in number the leaves become more "speckled," turn yellowish, dry up and fall to the ground. The decrease in the vitality of the vine results in a premature ripening of the hop cones, decreased yield, and weakening of the roots. The male vines appear to suffer more severely than the female and are sometimes entirely defoliated.

Several insects have been observed preying upon the red spiders, but not in sufficient number to have much effect on the infestation. The most numerous insect was a small anthorid bug, *Triphleps tristicolor*, White. Certain small ladybirds have also been observed.

For preventive measure the writer has found that the cheapest and most convenient insecticide is flour paste, 8-100, or a combination of lime-sulphur 36 degrees Baume, 1-100, and flour paste, 4-100. It is essential that the vines be thoroughly sprayed. These mites are not affected by any form of dry sulphur. Stripping the vines and burning the leaves is an excellent measure, but not reliable as a complete control. When the mites have reached above the point of stripping, spraying operations should be commenced immediately after stripping. A second spraying is also necessary seven or ten days later.

The cost per acre of spraying the different liquids with a machine of two acres per day capacity works out as follows: Stripping the vines, \$1.95 to \$2.19; spraying twice, each 300 gallons, with flour paste (8 per cent), \$7.80; spraying twice, each 500 gallons, \$8.27; spraying twice, each 300 gallons, with mixture of lime sulphur (10 per cent) and flour paste (4 per cent), \$8.03; spraying twice with same mixture, using 500 gallons, \$9.

Experiments with flour paste, 8½ to ten per cent, show that it is very ef-

fective in fixing the mites to the leaves, but as it has no effect on the eggs a second application is necessary. It is also quite harmless to the foliage and blossoms and does not interfere with the fertilization of the cones.

It is useful against all attacks of red spider except on sweet peas, carnations, greenhouse roses and plants having a heavy pubescence on the leaves.

The leaves of carnations and greenhouse roses are too smooth for the flour paste to adhere and the old method of washing with the garden hose remains the best method in this case.

MET AT ELSINORE

The last meeting of the Riverside County chamber of commerce was held at Elsinore where, in addition to a fine duck dinner, a launch ride on the lake and an automobile ride over the valley, much business was transacted which will prove of considerable advantage to producers of Riverside County, and perhaps to producers of California.

One feature discussed was pure seed legislation. A committee consisting of Messrs. Warmington, Stalder, Dudley, Willis and Edom was appointed to push this matter of the legislature protecting seed buyers.

Another matter of discussion was the installing of a school of poultry husbandry at Riverside in June of next year. At least it will be installed if there is sufficient encouragement and the chamber of commerce has pledged its hearty support.

Francis Cuttle presented the matter of the Newlands-Broussard River Regulation bill. A committee was appointed to work for this measure.

The next meeting of the organization will be at Blythe in the Palo Verde Valley near the Colorado River.

COMMERCE REPORTS

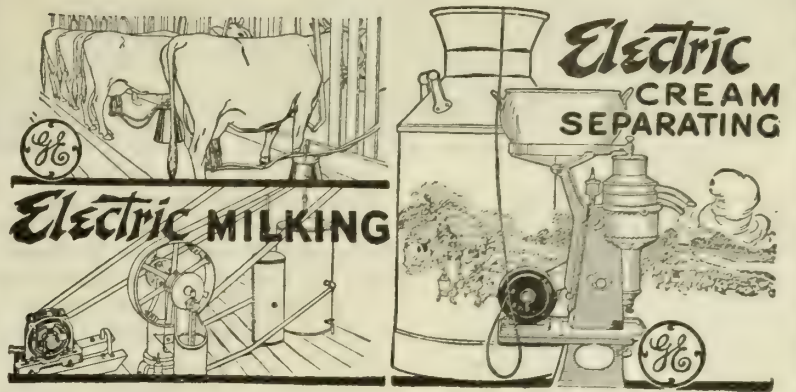
We have letter from E. E. Pratt, chief of the bureau of foreign and domestic commerce, department of commerce, Washington, in which he calls attention to the value to the American people generally, and of course exporters primarily, of the daily commerce reports which furnish information as to producing and manufacturing activities in other countries and also opportunities for introducing American goods. Reports are given in this publication from every corner of the world. These daily reports are sent for the nominal sum of \$2.50 per year. Address communications to Superintendent of Documents, Washington, D. C. Postage stamps not received.

SELLING CALIFORNIA PRODUCTS

Jay Dutter, formerly of Hemet and connected with the California Growers' Association, is on his way East to induce Eastern consumers to consider the merits of California fruits put up by California cooperative packers. This cooperative association is extending its activities almost every week. There are now canneries at Tulare, Kingsburg and Woodlake and there probably will soon be others at Hemet, Ontario and Chino. The plan to be followed by these concerns is to make up mixed cars of various California products and ship to the small Eastern markets. Mr. Dutter's work is to induce a trial of this plan of marketing and he will sell directly to the consumers or get as near to them as possible.

WALNUT CULTURE IN ARIZONA

Walnut growers who may have similar conditions to those in Arizona will be greatly interested in Bulletin No. 76 of the agricultural experiment station at Tucson. It is a small pamphlet but full of information as to cultural conditions in semi-arid sections.



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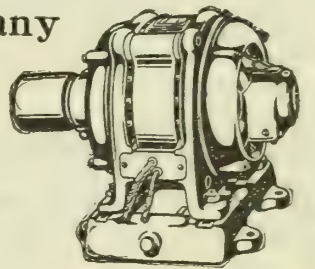
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makes a most delightful Christmas
present, with 52 reminders during the
coming year of the Christmas thought.
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lar series of books, "Poultry for
Profit" and "The Garden Beautiful".**SAFETY FIRST**The farmers of the cotton belt
are being urged to change their style
of farming and diversify. Heretofore
it has been on the "40 acres and a
mule" basis with the entire 40 in cot-
ton and the mule often desperately
hungry. It is now proposed—and is
being carried out in many sections—
that the cotton producer become the
producer of butter, eggs, a little corn,
a "few punkins", and other products
which will do well in the various sec-
tions of the South. This means en-
riched lands and farmers who will not
starve one year out of three.**DOLLAR, NO LESS**Kansas wheat growers are unit-
ing to demand one dollar as the mini-
mum price for their wheat. The first
principle of this organization is "To
fix a minimum price for wheat based
upon the average cost of production,
estimated to be at least one dollar a
bushel, and enforce it through con-
certed non-delivery."Maybe the first principle of the or-
ganization will operate before the one
fundamental principle of all market-
ing, and that is the fixation of price
by supply and demand. Of course we
realize that if this organization can
hold its members together and make
the non-delivery of wheat general, the
supply will be in a measure controlled,
but controlling the wheat market of
the world is a different proposition.**MILLION A DAY**It is said that the movies in this
country are costing the people in ex-
cess of a million dollars a day. If it
could be brought about that instead of
the slap-stick clown films there could
be something educational offered, the
public schools of the country would be
compelled to put forth their best
efforts not to be surpassed as an edu-
cational force. But as it is there is
a wonderful opportunity for improve-
ment in the films. One who has seen
some of the more educational of the
moving pictures shown at the
P. P. I. E. then seen the slush that
is thrown on the screens in some of
the cheaper theaters is inspired by a
desire to see something better given to
the people. We would not take the
ground that all our amusement should
be of the "high brow" type, for we
all need fun to soften the rough spots
of life. But much of the material
used on the films is in neither of these
classes.**SANITARY DAIRYING**The National Dairy Union, an
organization of allied dairy interests,would visit the state this year good
roads over which to drive their
machines. There are none of us who
have not heard our Eastern friends
remark in most glowing terms on our
road system. There are still many
places of great beauty inaccessible be-
cause of no roads. More, there are
sections where economic demands
should impel us to build more and
better. Now comes San Diego with a
proposition to make 1916 even better
than was 1915. Her citizens and those
in many other sections of Southern
California are working for a continu-
ance for another year of that most
beautiful of all expositions. Los An-
geles has united with San Diego and
it is now assured that funds will be
raised to finance the project. With
Europe still closed, why should not
California reap the benefit of the great
numbers of people who have visited us
during 1915. They have taken back
much of praise for conditions in this
state. Let us not disappoint those
who shall come as a result of their re-
ports. Nothing succeeds like good
roads. Let us have more of them.**EXPOSITION**The Panama-Pacific Interna-
tional Exposition closes next Saturday
at midnight. It has accomplished**HOW WE GET ADVERTISING**We have many solicitors or canvassers whose duty it is to get us
advertising, but first to investigate as thoroughly as possible
and know that the article to be advertised is all right and the
business methods of the firm strictly honest. We do this to
protect our readers.Sometimes we get fooled, but we do our best to be sure that every
man or firm mentioned in this paper is reliable. Then our solicitor goes
to the firm and asks for the advertising patronage. We tell them that
the California Cultivator has so many thousand readers, that these
readers are prosperous, intelligent farmers who are likely to buy these
particular goods if they are advertised in the California Cultivator,
because our subscribers read this paper carefully each week and have
confidence in what they see advertised in our columns.We tell this business man that we are trying to make the California
Cultivator very helpful and very welcome in the best homes of California
where he should be able to make good customers.We tell them that we accept nothing but high class, reliable adver-
tising so that we guarantee our readers will be treated fairly.We tell them that our readers are greatly interested in the California
Cultivator and want to see it prosper and for that reason they are glad
to give their patronage to the merchants who help support the California
Cultivator by advertising in it. Then we tell him what it will cost.That is one reason we ask your earnest support in reading our adver-
tising columns and buying of these merchants whenever possible.is objecting to the publicity which has
been given to the campaign for more
sanitary dairies and creameries. It
does not deny that there has been
occasion for such a campaign, though
unsanitary conditions have been found
only in exceptional cases, but from
the publicity given through the press
and the courts a feeling has gone out
that unsanitary dairies are largely
maintained throughout the country.
This has materially affected the con-
sumption of dairy products.In the main we believe there is no
more clean or healthful food than that
sent out from our dairies. If the
officials whose duty it is to enforce
the law could secure enforcement
without so much publicity we believe
it would be better for all concerned.
The claim is made that the publicity
amounts to a warning to the neg-
ligent. But in giving warning to the
negligent it is not necessary, at least
we feel that it is not, to frighten peo-
ple away from the business of careful,
painstaking dairymen.**GOOD ROADS FOR 1916**For the past five years we have
been looking forward to 1915 as the
great year in California. It has come
and nearly gone and has indeed been
a great year. In one particular we
were urged to make preparation, and
that was to give to the tourists whomuch for California in a commercial
way; it has accomplished more as an
educational factor; and it will be
many years before this influence ends.
The people of San Francisco, of Cali-
fornia and of the entire country may
well be proud of this great achieve-
ment. In its architecture, its exhibits,
its congresses, its embodiment of
world progress in the peaceful arts, we
believe the verdict of the world will
be that the Panama-Pacific Inter-
national Exposition marks the great-
est epoch for world betterment. To
describe its beauties or to estimate in
any way its effect is impossible, but
President Moore of the Exposition
has asked the Cultivator for "a brief
sentiment that will symbolize our
idea of what the Panama-Pacific In-
ternational Exposition has accom-
plished or will accomplish for human
betterment and world progress."In answer to this request the Cul-
tivator has sent the following:The Panama-Pacific International
Exposition has accomplished much
for human betterment through the in-
spiration which it has given to agri-
culturists to produce better and make
their calling—what it always should
have been—the very highest and
best. From the live stock pavilions,
from the great agricultural palace,
from every building on the grounds,
and from the horticultural beauties
at every turn have gone forth in-
fluences which will not only be of im-
mediate benefit to our own Pacific
Coast but will aid in an agricultural
uplift in all countries, and agricul-
tural uplift means uplift of social life
and of the arts and sciences.**Agricultural Notes**The wheat yield of Denmark for the
crop season just closed is twice last
season's.Canada now has three transconti-
nental lines connecting the Atlantic
and Pacific coasts.A forestry and water supply commis-
sion has for the first time been ap-
pointed in Venezuela.Canadian turkeys were shipped to
England last fall for the first time,
and more are expected to go this sea-
son.The raisin crop in the Malaga dis-
trict of Spain is somewhat short of
average production and is decidedly
backward.The government of Colombia, South
America, has sent two special agents
to this country to study our agricul-
tural and commercial institutions.Cotton heads the list of farm pro-
ducts exported from the United
States with an average annual value
for the last five years of \$550,000,000.
Packing house products are second
with an average of \$155,000,000, grain
and grain products following with
\$150,000,000 and forest products are
fourth with \$100,000,000.Para, Brazil, will celebrate the
300th anniversary of its founding by
a great exposition to open January 1,
1916. The agricultural section will
make a special feature of the develop-
ment and progress of the corn indus-
try and our consul at Para has been
appealed to to secure a large show-
ing of American varieties.The present need for enormous
quantities of hospital supplies in
Europe has directed attention to
many articles that heretofore have
been put to little use in surgery. The
common bog or sphagnum moss has
been discovered to be even more sat-
isfactory as a dressing than cotton. It
is more springy and diffuses matter
absorbed to a greater extent.Cooperative farm implement so-
cieties have been established in many
of the poorer districts of Ireland.
Implements are purchased and hired
out to members in the order in
which applications for them are made
but precedence is given to the mem-
ber who wishes to use the implement
for the longest period. The rate at
which implements are hired out to
members of a society is about half
what it would cost to carry out the
various operations under the old
regime. If, for instance, potato sort-
ing by hand costs 15s per ton, the
potato-sorter is hired out at 7s 6d per
ton.A farmers' cold storage plant sub-
sidized by the government has re-
cently been completed at Morrisburg,
Ontario, a town of about 1900 inhabi-
tants in a dairy farming community.
The purpose is to afford producers
the opportunity of storing when the
market is low instead of being at the
mercy of the large cold storage con-
cerns. Some of the average rates are
as follows: Butter, per 100 pounds:
Two weeks, eight cents; one month,
14 cents; six weeks, 22 cents; suc-
ceeding months, 12 cents. Eggs, per
30-dozen case: One month, ten cents;
season, 40 cents. Meats, per pound,
chilled: First month, one-fourth cent;
succeeding month, one-eighth cent;
per pound frozen, first month, three-
eighths cent; succeeding months,
one-eighth cent. Vegetables, per bag:
First month, seven cents. Per barrel:
First month, 12 cents; succeeding
months, ten cents.

Agricultural News Notes



of the Pacific Coast

Northern California

Esparto, Yolo County, is planning incorporation.

The Acampo Nursery reports dull market for peaches but a brisk one for almonds.

Citizens of Eldorado County are opposing the consolidation of Eldorado and Tahoe national forests.

W. V. Shear of the department of agriculture is investigating potato conditions in Humboldt County.

The university farm management is highly elated at the winnings on fat steers made at the Panama-Pacific.

A meeting was held at Lakeport, Lake County, last Saturday to discuss the matter of a county water district.

Yolo County expects the planting of between 11,000 and 15,000 acres of rice in the western part of the county.

Colusa County swine breeders have employed a veterinarian to look after the health of the hogs of the members.

Entries are already being made for exhibits at the state poultry show to be held in Sacramento, December 14-18.

Rice growers of the Sacramento Valley are planning a persistent fight against weeds and other pests of the rice field.

The farm bureau center at Jacinto, Glenn County, has taken an abandoned school house and fitted it up for meetings of the center.

Eastern visitors to the Panama-Pacific poultry show made a visit to Petaluma and were surprised at the showing of large poultry plants.

Property owners of Thermalito, Butte County, are perfecting plans for the Thermalito irrigation district which will cover about 5000 acres.

The Cheney slough irrigation district near Colusa is being discussed. It will cover 4200 acres or more, that number having already signed up.

The Sutter and Yuba County boards of supervisors will probably send the exhibit of those counties at the Panama-Pacific Exposition to San Diego.

The Orland irrigation project has been materially improved by lining some of the main canals with concrete to the extent of 153,000 square yards.

Orange growers and shippers of Butte County are insisting on highly colored sweet fruit. As a result shipments are not so forward as last year same date.

Experiments have been made by orchardists in Sutter County in the planting of Chinese seedling peach trees which are said to do well in alkali sections.

A committee has been appointed by the Sacramento Valley Development Association to organize a fight against the water grass pest, which is proving a serious menace to the rice fields.

H. L. Murphy writes that his shipment of pure bred Shorthorns has all been sold to White and Terry of Sacramento County and Fred Hammel of Yolo County, and that he is now starting for the East for another shipment of pure bred.

Central California

Porterville is shipping oranges to San Salvador.

San Joaquin is the latest to become interested in rice production.

Pumpkin packing is in full swing at the Selma, Fresno County, cannery.

The first Central California oranges reached San Francisco November 17.

F. E. Robertson is president of the farm bureau of Denair, Stanislaus County.

California shipped more than 13,000,000 pounds of raisins during the first eight months of 1915.

Grain producers of the San Joaquin and Sacramento Valleys are considering shipping grain in bulk.

C. Z. Herbert of Monterey County, has a young boar from the Ed E. Johnson Duroc herd of Turlock.

Oliver Bardin and Frank Chisholm, both of Monterey County, have new importations of Curtis' Napa Reds.

The vintage in the San Joaquin Valley is practically over; only about 25 per cent of the juice has been fortified.

The Chowchilla chamber of commerce is discussing ways and means of improving irrigation conditions of their section of Madera County.

During the past summer nearly 3000 hogs have been inoculated with anti hog cholera serum in San Joaquin County and the treatment has been declared a success.

Enough money has been secured to insure the organization of the California Peach Growers' Protective Association. Definite figures are not yet in but sign-up day resulted in at least \$25,000 being subscribed.

More than one-third of the cows of a large dairy near Modesto recently died because of alfalfa bloat. The trouble was caused by a defective fence that permitted the stock to break into a field of lush young alfalfa.

The Associated's effort to secure general observation of raisin week by retailers the country over was most successful. In Chicago 225 leading grocers cooperated and made special features during the entire week of November 1-6. Of course Sun-Maid was foremost in the display.

Merced County farmers are elated over the judgment of \$425,800 against the San Joaquin and Kings River Canal Irrigation Company, a Miller and Lux holding. The riparian rights of the farmers had been set aside by the irrigation company. It has required 15 years' continuous litigation to secure this decision.

There is to be a series of swine breeders' meetings held in Tulare County which will be of especial interest. There will be instruction in feeding, hog cholera and its control, with demonstration of treatment and other features of interest. Dates of the meetings are: Visalia, December 13; Tulare, December 14; Waukena, December 15; Porterville, December 16; Poplar, December 17, and Dinuba, December 18.

Southern California

Redlands is to have another orange packing house.

Imperial Valley ginned 6765 bales of cotton last year.

Calexico anticipates the establishment of a cotton seed oil mill.

The Hemet-San Jacinto Growers' Association is busy processing olives.

Saticoy, Ventura County, has shipped in excess of 1000 tons of walnuts.

Orange County anticipates in excess of \$4,000,000 from its next year's orange crop.

Imperial creameries are pleased at higher prices for butter than a year ago this date.

Southern California potato growers are pleased at the present upward tendency of prices.

Orange growers of the southern part of the state are anticipating much better prices than during last year.

The Anaheim Citrus Fruit Association recently held its annual meeting at which nearly all its 350 members were present.

The earliest oranges in the southern part of the state were marketed from the Colorado desert section of Imperial County.

Imperial Valley cotton plantations have been made the scene of moving pictures to illustrate methods of California farming.

Frampton Brothers of Artesia, Los Angeles County, produced from 9.64 acres 330 tons of ensilage at a cost of about \$1.05 in the silo.

Hundreds of cases of eggs and many cans of frozen eggs unfit for market have been destroyed by officials of the state board of health.

The large administration building on the state school farm at Whittier, built many years ago, is being razed because of its unsafe condition.

The Cuyamaca ranch of 22,000 acres has been sold and it is asserted water will be developed and a place of beauty and productiveness made.

Ventura County bean growers are getting busy and perfecting an organization which they hope will be in condition to handle the lima bean crop of 1916.

The Sierra Madre, Los Angeles County, Citrus Association recently held its annual meeting and elected M. M. Hamilton, president and W. I. Allen, secretary.

Ten thousand acres of northern Imperial Valley lands have been secured by a large corporation and extensive improvements will be made in that section of the valley.

The Claremont Pomological Club, one of the best horticultural societies in Southern California, has elected Chas. E. Needham, president; Mrs. Olds, treasurer, and V. V. Leroy, secretary.

The agricultural assembly movement is becoming general all over the Imperial Valley, and it is now asserted there will be a representative of every school district in the county at the first meeting to be held at Brawley.

The Coast

Arizona has organized a state board of trade.

Oregon's Chinese egg law has been declared constitutional.

Yuma, Arizona, was visited by a slight earthquake last week.

Idaho's wheat crop is larger by 3,000,000 bushels than ever before.

The quarantine against Mexican cattle in Arizona is still maintained.

Paul V. Morris is the new state leader of county agricultural agents of Oregon.

Lane County, Oregon, is building more silos this year than any preceding year.

Arizona will maintain an exhibit at the San Diego exposition during the year 1916.

Potato growers of Yakima Valley, Washington, are holding firmly for \$14 and \$15 per ton.

Utah beet sugar farmers lost heavily because of earlier than expected hard freezes.

Chandler, Salt River, Arizona, is fattening 3000 head of feeders shipped from Minnesota.

The Pacific International Live Stock Exposition opens at North Portland, Oregon, next Monday.

The American National Live Stock Association will hold its next meeting at El Paso, Texas, January 25-27.

One trapper in Idaho recently caught 150 head of coyotes in one month, on which he received a bounty of \$2.50 each.

One of the largest sheep deals consummated in Montana for years was the sale of 12,045 head, commanding nearly \$65,000.

Farmers of Twisp, Washington, have largely discontinued summer fallowing, preferring crop rotation and diversified farming.

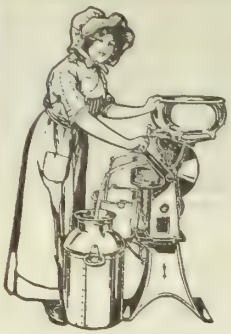
Heavy snowfalls have driven the sheep from the ranges of Utah and sheepmen are having trouble in finding sufficient pasturage.

The people of Yuma recently celebrated the piping of water to the Mesa Irrigation District. Hundreds of acres will be given opportunity for intensive irrigation.

The Pecos Valley of New Mexico recently held its state live stock and products exposition which was so successful that a \$4000 deficit from last year was wiped out.

The total apple production of the Pacific Northwest is estimated at 13,238,000 boxes. Washington produced 7,092,000; Oregon, 3,402,000; Idaho, 1,708,000; Montana, 1,036,000. It requires three boxes of apples to make one barrel as quoted in the East.

The Northwest By-Products Board, which was appointed sometime ago, reports that as the indications are that there will be an exceptionally large yield of all fruits in 1916 there must be preparation for handling of the waste products of the orchard. A meeting was held in connection with the National Apple Show at Spokane, Saturday, November 20.



There is no good reason why you should wait till next spring before getting a
DE LAVAL

IF YOU ARE SELLING cream or making butter and have no separator or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval.

THERE CAN ONLY BE TWO real reasons for putting off buying a De Laval; either you do not really appreciate how great your loss in dollars and cents actually is or else you do not believe the De Laval Cream Separator will make the savings claimed for it.

IN EITHER CASE THERE IS one conclusive answer: "Let the local De Laval agent set up a

machine for you on your place and SEE FOR YOURSELF what the De Laval will do."

YOU HAVE NOTHING TO risk and more than a million other cow owners who have made this test have found they had much to gain.

YOU CAN'T AFFORD TO WAIT till next spring. Let the De Laval start saving cream for you RIGHT NOW and it will earn its cost by spring.

SEE THE NEAREST DE LAVAL agent at ONCE or if you do not know him write us direct for any desired information.

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Importers of

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759 South Los Angeles St., Los Angeles

First Annual Auction Sale of Purebred Hogs

under the auspices of the

California Swine Breeders Association

will be held at the

State Fair Grounds, Sacramento, Cal.

on

January 27, 1916

100 head of pure bred hogs of various breeds will be sold. These represent the tops of some of the best herds to be found in California. All hogs sold will be registered and will be guaranteed breeders by the consignors. The catalogs will be ready about January 12th, and can be secured of

J. L. Thatcher, Riverside, Cal.

or J. I. Thomson, Davis, Cal.

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All kinds of Feed Cutters, hand or power, Silo Cutters and Blowers a specialty. Write us your needs and get catalogue by return mail. Call and see us when in the city. Buy the genuine Petaluma Chicken Cutter of any dealer or direct from us. **ARNOTT & COMPANY, Inc.**
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Biggest stump pulled in five minutes or less. Clears an acre of land a day. Makes your stump land money land. 30 days free trial—3 year guarantee. Get our new book and special low price offer now.

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Live Stock and Dairy



CALIFORNIA LIVE STOCK BREEDERS

Written for the California Cultivator
By Special Live Stock Contributor



GRICULTURAL authorities of national and international reputation who have visited the international exposition at San Francisco during the year have paid many high compliments to the character and caliber of the men engaged in the breeding of pure bred live stock in this state.

These broad-minded and critical observers who have visited us see a great future for our live stock industry because of this and the fact that we have feed and climatic conditions peculiarly adapted to successful stock growing.

The opportunity is here and we have the factors necessary for success. The

who would breed and sell any kind of an animal that has a pedigree, instead of maintaining high standards of usefulness, progress would be slow, but so long as registered animals are better individuals of their kind than grades and scrubs and are able to transmit their good qualities to their offspring, there is a sound economic reason for their existence and propagation at satisfactory prices to those engaged in the business.

It is possible for an unscrupulous breeder to do great injury to the industry. When he sends out an inferior animal that is a disappointment to the purchaser or where there is a question about the correctness of a pedigree or difficulty in securing it, buyers are apt to distrust not only this man but all other breeders. And this kind of bad advertising travels about a neighborhood with much greater rap-



MODEL DAIRY BARNS

One of the best appointed dairies in California is that of Mr. Sam F. Rhoads, near Lathrop. Mr. Rhoads believes in greatest comfort for the stock which serves him so faithfully. He also believes in maintaining sanitary conditions which will enable him to put out a product that will be attractive to the most fastidious customer.

The picture above gives one view of his model milking barn, showing particularly his method of milking with one of the latest and best milking ap-

pliances. The air pipe, or rather the vacuum pipe, extends along the entire length of the barn, as may be noted above the heads of the cows. Perfect sanitation of floors and gutters is maintained by flushing out at regular intervals. Note there is no possibility of dust or insects dropping from above. The ceiling makes the room as attractive as the ceiling of an ordinary farm home.

At present Mr. Rhoads' stock is largely of grades but these will be replaced as rapidly as possible with pure bred Guernseys.

further development of a great industry is in the hands of the big men now breeding live stock and those who are engaging in the business.

California has produced many pure bred animals of superior excellence, and we now boast of many herds, studs and flocks of national reputation.

What we need is many more of them. Not only should we have more herds to supply the increasing demand for foundation stock for new herds of pure bred animals to those already established, but there should be available pure bred rams of high quality for the grade flocks, dairy bulls capable of increasing butter fat production in their offspring for the grade dairy herds, pure bred beef bulls that will sire better beef animals for the ranges and farms, registered boars that will beget more economical pork producing pigs and more good stallions to sire more and better horses.

The success of any industry depends on the men engaged in it. If the majority of California breeders were men

idity than news about a satisfactory transaction and a good individual.

The organization and growth of our state organizations of breeders, such as the Draft Horse Breeders' Association, the Swine Breeders' Association, the Holstein, Jersey and other organizations formed for the purpose of conserving the interests of those breeding the various breeds and classes of stock, is a big factor in maintaining the high standard of excellence necessary in the conduct of the pure bred live stock business. Publicity helps the man who is producing superior individuals and who deals squarely. It is of no benefit to have it known among all interested in a particular breed that any certain one engaged in it cannot be relied upon and that inferior stock is being bred or handled.

We know that we have splendid men and animals and opportunities in California and it is good to have others recognize it—it should be a spur to greater effort and higher accomplishment.

When writing advertisers, mention The Cultivator.



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The Clean-Cut Simplicity of Louden Stalls and Stanchions in design and construction; their absolute freedom from dirt-gathering cracks, crevices, corners or attachments, make them the only really sanitary barn equipment.

The Superior Flexibility of the Louden Stanchion permits the cow to lie down or rise without the dangerous straining common to the more rigid type. The Louden Stanchion (all steel or wood-lined) is an absolutely safe and comfortable stanchion.

Louden Stalls and Stanchions are built of the finest, high-carbon tubular steel and are exceptionally strong, easily installed and cost no more than wood.

We also manufacture Feed and Litter Carriers, Spring-Balanced Mangers and Manger Partitions, Bird-proof Barn Door Hangers, Hay Tools, Power Hoists; Calf, Bull, Cow and Pig Pens, Window Ventilators, Etc.

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THE GUERNSEY

is popular among the dairy-men who appreciate that Economical production, richness and fine flavor of products lead to larger profits.

Try Guernseys and be satisfied.

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Registered young bulls from best families. Some of serviceable age—also both young and matured females.

Registered Berkshire Pigs

Masterpiece, Longfellow and Robin Hood strains. Extra fine individuals of both sexes at reduced prices—we pay registration fee. Careful attention given to mail orders.

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Registered Swine

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and

Duroc-Jerseys

We can now fill orders for Bred Sows, Boars of breeding age, Glits 8 to 9 months old, and Weanling Pigs.

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Write or call and see us.

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against the ravages of cholera by vaccinating them

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made and tested under the most rigid U. S. Government supervision; sold at reasonable prices. It's a business proposition. You're buying protection. Write, or telephone **Thatcher Serum Co., Riverside, Cal. J. L. Thatcher.**

WORMY HOGS UNPROFITABLE

No hog can eat enough to nourish its own body and at the same time feed a host of worms. Most of the food which a wormy hog eats goes to the worms along its intestinal tract. For that reason wormy hogs are unprofitable. Development is so delayed that the gains, if there are any, will not be sufficient to pay for the feed consumed. Furthermore, wormy hogs are so weakened that they easily become susceptible to other diseases. A pig is much more apt to take cholera if it is weak than if it is thrifty.

An unthrifty pig with a good appetite is pretty sure to have worms. Something is wrong with any animal which eats well but does not grow or fatten. In troubles other than worms the animal usually loses its appetite. Other symptoms are loss of the sleek coat; the hair becomes rough and stands on end; the pig develops a big paunch and may be tucked up. Examination of the feces will show worms and worm eggs. These become more numerous upon administration of a purgative.

Dr. A. H. Logan, United States veterinary field agent, who is stationed at the University of Florida experiment station, offers the following prescription for worms in hogs: Santonin, eight grains; areca nut, two drams; calomel, one grain; sodium bicarbonate, 1 dram. This dose is sufficient for a pig of 100 pounds. It is best to give this by mixing it with thin moist feed. If a large number of hogs are to be dosed, mix the prescription in the foregoing proportions for each 100 pounds live weight. Separate the hogs into lots of 15 or 20 so that each will have free access to the trough and will be able to get its share.

Worms may be kept from hogs which are free of them by keeping the following mixture where the hogs can get it: ground charcoal, one and one-half bushels; common salt, four pounds; hard wood ashes, ten pounds; slaked lime, four pounds. This mixture is cheap and will keep the hogs in good condition. Keep it in a dry place where they can come to it at will.

BUTCHERING NOTES

Butcher hogs at home. Give them water but no feed for a day before killing.

Bleed the hog with an eight-inch straight-bladed knife.

Be sure bleeding is done before scalding or the skin may be left too red.

A heavy blow with an axe between the eyes will stun the animal before sticking.

The meat may spoil if the animal is excited before killing or the weather is warm afterwards.

Scrape as quickly and rapidly as possible after scalding. The cold carcass is hard to scrape well.

Bleeding will be finished more quickly if the animal lies on a steep slope with its head down hill.

Keep the hog moving in the barrel. If the animal is left pressed against the barrel the hot water cannot get at that part of the carcass.

Scraping is easier if a shovelful of hardwood ashes, a lump of lime, some concentrated lye, or a handful of soft soap has been added to the water.

Use a thermometer. Do not attempt to scald with the water at above 150 degrees. A good scald can be obtained at 140 degrees but it takes longer.

In opening the carcass split the pelvic bone between the hams with a knife by cutting exactly in the center. To open the breast bone with a knife cut a little to one side of the center, but do not let the point of the knife get behind a rib.

These methods are used at the Missouri college of agriculture where students are taught the principles and practice of home butchering and curing. There is nothing to prevent the farmer from having the best without the extravagance of big store bills for salt pork. Both he and the storekeeper will profit if he cures meat for his own table and uses the money saved to buy things he would not otherwise get.

Remco Redwood Pipe Tanks

We build to order, for any capacity, TANKS FROM CLEAR AIR-DRIED REDWOOD—THE WOOD EVER-LASTING.

Our tanks are built to exact measurement by the most skilled mechanics.

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They are cheaper than metal tanks and outlast several of them.

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Suitable for Irrigation, Power, Water Supply and Drainage or Sewage Disposal.

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DON'T knock off so early for milking. Install an Empire Mechanical Milker. Keep your team, yourself and your men in the fields working an hour longer. It means real money, especially on busy days when the grain has just got to be taken care of. The

EMPIRE MECHANICAL MILKER

saves time, labor, expense and eliminates all the drudgery of milking. It increases the milk flow—means purer milk—bigger profits. One double or two-cow unit will milk 20 to 30 cows an hour. One man can take care of two double units. Cows stand content for the Empire. The natural air pressure teat massage is firm and gentle.

Let us send you description and pictures of Empire Milkers and Empire Cream Separators that are making good in many fine dairies. Ask also for our offer on the Empire Gasoline Engines and Empire Star Feed Mills. Ask for Catalog No. 44.

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High Grade Stock of Best Strains
Young Stock For Sale
M. BASSETT Hanford, Cal.

Glenview Poland Chinas

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Berkshires CHOICE YOUNG
Pigs of both sexes.
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FIELD NOTES

By C. A. Briggs

Modesto, the land of alfalfa, of fine cattle and contented farmers, has many show places, but none of greater interest than the farm of M. M. Holdridge, the home of the celebrated Creamcup herd. From this herd can be selected dozens of individuals that would be winners in the show ring or on official test. They have been bred for type, size, persistent milking qualities and the production of a high percentage of butter fat. That the breeding has been successful is shown by the records made. Ten places have been won by this herd in the official prize list of the Holstein-Friesian Association of America. One cow, Tula De Kol Pietertje Netherland, leads the

but grown on land that was summer fallowed the previous year, and a cover crop grown and turned under in the spring, it produced 13½ tons per acre. The rainfall for 1913-14 was 28 inches, and for 1914-15 it was 20 inches.

The milo cut for grain was on two fields. In field No. 12 in 1914 a crop of barley was taken off. It was plowed January 1 and replowed April 13, 1915. This field produced 4020 pounds of grain per acre without any irrigation.

An orchard plot under the conditions mentioned above produced 5491 pounds of grain. The following method of cultivation was used: The land was plowed as early in the spring as possible; kept cultivated and clean until all the rains were over; sown



Tula De Kol Pietertje Netherland, of the Creamcup Herd.

list of the farm's prize takers with 33.82 pounds of butter in seven days, which makes her the champion cow of California. She also holds twelfth place in the entire United States, competing against a class of nearly 12,000 cows. Another of these Creamcup cows holds the eighteenth place in the United States with a record of 33.52 pounds of butter in seven days. A record recently made and never before published is that of Anselogess of Sleepy Hollow of 896.2 pounds of butter in one year. The herd sire, Creamcup Pontiac Burke, is a noble specimen of the breed and a worthy one as is amply proven by the records of his daughters.

The McHenry Poultry Farms, Modesto, has just added a 4000-egg Cyphers Mammoth incubator to their plant. They have besides six 2400-egg Cyphers. The proprietor, R. A. McHenry, says the demand for baby chicks keeps them all busy turning out the McHenry strain of White Leghorns.

A new silo under construction on the farm of E. O. McClure of Modesto is one of the exclamation marks of progress. Mr. McClure has a small herd of registered Holsteins of exceptional quality. Five cows are now on yearly test.

H. L. Murphy of Perkins, Sacramento County, is in the East on a buying expedition. He plans to bring back 50 or more Shorthorn cattle for his own herd and other Sacramento Valley breeders.

DWARF MILO

Dwarf milo has been proved a highly successful crop in the university's experiments with sorghums at the university farm.

As a silage crop milo equalled Indian corn in tonnage, and as a grain crop it exceeded anything grown under field conditions at the university farm at Davis this year.

The average production at the university farm in 1915 of dwarf milo for silage was 11.27 tons per acre from 6.05 acres, and of grain it was 5175 pounds per acre from 12½ acres.

The milo cut for silage came from two different fields. In field No. 4 with one irrigation of 6 inches of water it produced 9.73 tons per acre. In an orchard plot with no irrigation

IMPORTANCE OF MINERALS FOR HOGS

Written for California Cultivator
By W. S. Guilford

One thing that is overlooked on many ranches where hogs are kept is a supply of mineral matter for the hogs. The hog is very much like the human animal in many ways, and this is particularly true in regard to its needs for materials required for the building of the various organs and parts of the body.

A comparatively large amount of mineral matter is needed for making the bones of an animal. Some of this is contained in all of the grains and other foods, but in addition to this it is found that the animal does better, and that stronger bones are made when this mineral matter is supplied in some form aside from the feed.

Many of the best hog raisers in America keep a supply of minerals before the hogs at all times. Sometimes the various ingredients are mixed together and placed in a trough, and they are frequently put in bins in self-feeders—so that the hog may be the judge of the kind and amount.

The minerals used are lime (either air slacked or ground limestone), ashes (wood or coal or both), charcoal, salt, ground phosphate rock, and frequently small quantities of sulphur and copperas. The copperas can be ground or dissolved in water and sprinkled over the other ingredients.

Mr. J. W. Clise, Ayrshire breeder of Seattle, Washington, reports sales to California breeders during the dairy exhibit at the Panama-Pacific Exposition: J. Henry Meyer, two prize winning heifers; Howard Estate, two young bulls; LeBaron Estate Company, one bull and two heifers to which high awards were given; E. B. McFarland, second prize two-year-old bull, four cows and a heifer, several of the cows being from the winning "aged herd"; D. C. Cormode, two heifers, one of which was first; A. Bloom, an exceptionally bred young Robin Hood bull.

Poultry for Profit

CHICKENS IN THE BACK YARD

Written for California Cultivator
By Jean A. Koethen

THE pitfall into which the backyard poultry keeper most readily falls is that of keeping too many chickens. If a dozen hens fed on table scraps return a neat profit, two dozen are surely better, and 50 better yet. And so the yard is filled, hens are crowded in their houses and growing chicks in their runs. Result, stunted young stock, a tired out and disgusted caretaker and no more eggs, most likely than the 12 well-cared-for, comfortable hens would have produced.

I shall never forget the spring I tried to raise 300 chicks on the back of a 50-foot lot. I had read glowing stories of the number of hens a 50-foot lot would hold and the great profits derived from a flock of 100 in such quarters, and had to take my try at it. "No one ever does that but once", said an observing neighbor who had doubtless had her own experience, and I never tried it again. Baby chicks are such tiny creatures. A thousand or so would rattle around in the smallest backyard. But wait. That baby chick that weighs only a few ounces now will reach five, eight or ten pounds in six months. What will you do then with 100, or 500 or even 200?

Well, that spring I hatched perhaps 250. I had set my aim at 300 because that would give me the 100 pullets I was ambitious to raise for winter layers, but by the time the 250th was out of the shell I realized what I was up against. Had they been in lots of 100 each, the situation would not have been so serious, but I had used a 50-egg incubator and some hens, so I had broods of from ten to 40 chicks in Philo coops or following hens about, and my yard, which had seemed of unlimited capacity, suddenly became very small. I could hardly put my foot down without stepping on a chick, and as the older ones came to require more and more room, conditions became worse and worse. Mites, of course, soon found their way into the overcrowded coops, and many of the older chicks dropped off by twos and threes. As soon as they were good frying size I got rid of all but the very best pullets, but at a loss, and that summer's experience has served me as a solemn warning against overcrowding.

It is a mistake to figure that because 12 hens are kept at a profit of \$2.00 or \$2.50 apiece, 50 will be equally profitable. Small flocks are always more profitable than larger ones, that is the average production is higher. Table scraps figure largely in this average. There is no better feed for chickens than good, clean table scraps. This is the very best of balanced ration, and the cheapest. As soon as the number of hens increases to a point where table scraps become a negligible part of the ration, that minute cost of production begins to rise.

The question of green feed is another that must always be considered in planning for a back yard flock. Hens must have greens in one form or another. Where ground for raising green feed is limited, as it is in a city lot, the number of hens must be limited. Sprouted grains may answer as a substitute for a time, and lettuce from the Japanese and Chinese gardeners help out as a stop-gap in late summer, but the one is expensive and the other troublesome and sooner or later we fall back on the chard and kale and cabbage of the home garden.

Nothing is so satisfactory in maintaining the supply of chicken green as a little patch of alfalfa. Few back yards are so small that a corner 20 feet square cannot be set apart for this purpose. Planted in January it furnishes a green run for the baby chicks in May, and if it is well water-

ed and the larger birds are not allowed on it, it will supply green cut alfalfa for a small flock through the summer. Next to alfalfa kale furnishes more green feed for the amount of space it fills than any other plant.

What breed is best for the back yard? Not the Leghorn, nor any Mediterranean breed, though I know some people do keep them successfully. They are hard to keep where you want them and do not furnish the table poultry most families desire. Among the heavy breeds there is a large choice. No one can go amiss who chooses the Rhode Island Red, Wyandotte or Plymouth Rock. If he wishes something less common, there are the Houdan and the Faverolles, both reputed excellent layers and fine table fowls, and the Light Brahma, not always a satisfactory egg producer, but second to none for the table. Many back yard poultry keepers think there is nothing like the Minorca, though it is hardly a table bird and the Cornish Game has a host of admirers. I must confess myself to a desire to try the Dominique, the best known ancestor of the Barred Rock. It disappeared from public view for a while, but is coming back into favor in certain quarters and is well spoken of as a dual purpose fowl.

Whatever breed is selected choose that one and no other and do not be persuaded into filling your runs with a conglomeration of all sizes and colors. Such a mixture is not a pretty sight and there is absolutely nothing to be said for it. A pen of well kept, standard bred fowls of any single breed is a beautiful sight. A mixture of red and white and black and yellow is neither beautiful nor useful. It is proper, of course, if one is dissatisfied with his chosen breed to try out another, but let the two be kept separate and one be disposed of as soon as the test is concluded.

The great trouble with mixing breeds is that you never get anywhere. Unless pens are covered and the greatest care employed, there is sure to be some crossing, and the work of years in building up a breed is undone by one outcross. The first hybrid generation may be good layers, though they are rarely better than the parents, but the second nearly always goes to pieces. Experts know how to introduce a cross in such a way that the good qualities of the outcross are added and nothing taken from the good qualities of the original breed, but such experiments are for experts only.

A suitable house for a back yard flock is the shed-roof, open-front building so common in California. It should face the south and should contain about three square feet of floor space for each Leghorn or four for each fowl of the heavy breeds. A house ten feet square furnishes ample roosting space for 25 birds, and this is as many as should be kept in any city back yard. The house should be high enough for the attendant to stand up in, say five and one-half feet at the rear and seven feet in front. Some provision must be made for a covered scratching pen, and this may be done either by using dropping boards and letting the fowls run underneath, or by adding a scratching room to the house. Many hens do without this luxury, but shelter from winter rains is a great factor in egg production. Hens that must sit in their roost to keep out of the rain or else wander about, wet and bedraggled, are in no condition to do their best, and it ought not to be expected of them.

The back yard flock, well fed, well housed, and confined by a tight fence so that it can neither scratch up its owner's garden nor visit his neighbor's flower beds, is a joy forever. I know of nothing that gives a family more pleasure or more satisfaction. A dozen good hens will keep the table

supplied with fresh eggs and a toothsome fryer now and then.

Every Sunday, cold or hot
He'd a pullet in the pot.

is a catchy little rhyme that in the mind of its writer described the comfortable condition of a certain French peasant, and thousands of American families, town families, that 20 years ago hardly knew the taste of chicken or of a fresh egg are now, thanks to the development of back yard poultry culture, enjoying those luxuries. The number of fowls kept in cities has increased tremendously in the last ten years. This is one reason, perhaps, for the lower prices of eggs, but it means cheaper living for town families and better living. It means saving the kitchen waste that would otherwise be either an expense or a menace to the health of the community. It is another interest to keep the boys and girls off the street, and a fad for the man of affairs. By all means let us have chickens in the back yard, but let us not have too many.

PRODUCTIVE POULTRY HUSBANDRY

"Productive Poultry Husbandry", a complete textbook dealing with the principles and practices involved in the management of poultry, by Harry R. Lewis, B.S., of the New Jersey agricultural experiment station, published by J. B. Lippincott Company, Philadelphia, at \$2.00 net. The Cultivator will be glad to supply the book at the above price or, including a year's subscription to the Cultivator, \$2.75.

This is one of the most complete poultry books we have seen, with 536 pages of descriptive and illustrated text. As a reason for being we quote the first two paragraphs from its preface.

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"A number of poultry books have appeared during the past few years in response to an insistent demand, some dealing with special branches, others covering the entire subject in a general way. But the great need in poultry literature is for a work which covers the subject in a thoroughly scientific yet practical manner, treating each branch in sufficient detail to give entire clarity and giving to the reader the results of research at the various experiment stations and the methods that are most successful in present-day practice."

This is the nearest to a complete treatise we have seen of the poultry industry and it has big value for the practical poultryman. There are 28 chapters with appendix and index. The subjects range all the way from the meaning of poultry farming, choosing of a poultry farm, making a successful start, different breeds of poultry, down the line to fattening and marketing, keeping records, exhibiting and judging, diseases, parasites and enemies.

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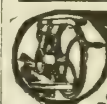
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Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

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A JOKE ON THE ANGEL

That was a good joke we played on the angel who gave Adam and Eve and their descendants work as a punishment; we have turned the curse into the jolliest kind of a blessing. I would almost say that work is the greatest thing in the world. Love may be greater, but love has its tortures as well as its joys and love may vanish from our lives. But while work remains nearly every sorrow can be forgotten, every grief in time can be healed. It is what keeps us all sane. It is a tremendous moral agent. We shake our heads sadly over the man who has brought up his sons without work. Will Comfort in the Craftsman says: "Give a man his work and you may watch at your leisure the clean-up of his morals and manners. Those who are best loved by the angels, receive no thrones, but a task."

And life has been worth while if we have been able to turn every trouble, every grief, every disappointment, inside out and find the compensating spiritual good in it. I guess that is another of the things we are here for.

A GOOD INDIAN'S PRAYER

"O Powers that be, make me sufficient to my own occasions. Teach me to know and to observe the rules of the game. Give to me to mind my own business at all times and to lose no opportunity of holding my tongue. When it is appointed for me to suffer, let me, so far as humanly be possible, take example from the dear, well-bred beasts and go away quietly to bear my suffering by myself. Help me to win, if win I may, but (and this, O Powers, especially) if I may not win, make me a good loser. Amen."

We do not come to church to be told that we are withered leaves and crawling worms, but to be assured that we are men, made only a little lower than the angels, and heirs of everlasting life.—Robert Collyer.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Grafting Carob

I have a male carob tree. If I graft on some female branches will the whole tree bear fruit or only the female branches? Would you graft a few of the branches in the center of the tree? What month is best to graft?—Subscriber, Pasadena.

We will ask our subscribers to give their experience. Of course only the grafts which bear pistillate flowers would give fruit. Presumably only a very small portion of the male tree need be left to supply pollen to flowers on the grafted branches.

Grafting Guavas

I would like to graft or bud a strawberry guava to a yellow guava. Can any of your grafters help me out by giving their experience?—Subscriber, Pasadena.

We have never heard of efforts to graft the guava but we will be glad to hear from subscribers.

Pruning Almonds

How should two-year-old almond trees be pruned? Should they just be thinned out or is it best that the tops be cut off? They were cut back last year to three sprouts about one foot long. Was that the proper procedure?—Subscriber, Lodi.

The first three years with the almond should be given to forming the top for future bearing. The first step is to give sufficient strength to body and limbs to carry the weight, hence the first year the top is usually reduced to three or four main branches with three or four buds to each, say six to twelve in length. The next year there is a similar reduction of the branches on the foundation of the preceding year's growth, these to be reduced to two or three six to twelve inches long. The third year the same process is continued, after which different treatment is necessary, according to the thrift, variety of tree, and other conditions.

Spasms

Turkey has been having a kind of spasm at frequent intervals. He jumps sideways and goes round and round, sometimes falling. Has been affected for some time, but eats wells.—Subscriber.

Either this turkey has received some injury which has affected the brain or nerve centers, or there is an irritated condition of the intestines due to indigestion. Try a good dose (one to two tablespoons) of castor oil and follow this for a few days with a teaspoon of Epsom salts daily in moist mash. See that it gets all the green feed it will eat and not much else for a few days. If the trouble is due to an injury there is nothing to be done.—J. A. K.

Canker Mouth

I have been troubled for sometime with canker mouth in my flock of chickens. Have been doctoring with different remedies suggested but so far nothing has helped. Have lost some 200 in about six weeks or two months. Can you give me a remedy? This seems to start with little pimples in the mouth and throat. It seems to be spreading quite rapidly, at first just one bird was affected occasion-

ally and now as many as 25 in a day.—Subscriber, Corning.

Swab out the mouth with peroxide of hydrogen, then swab very lightly with tincture of iodine. Examine the litter in the scratching pens for mold germs and see that your feed, especially the cracked corn, which heats so rapidly, is free from every sign of mold. Sometimes chicken pox is accompanied by sores in the mouth. If there are any scabs or pimples on the head or face or comb it would be well in addition to the peroxide and iodine treatment, to give each bird a grain of calcium sulphide daily. Mix the dose in a little moist mash and it will be readily taken.—J. A. K.

Oak Root Fungus

I have been told that the cause of my trees dying is oak root. Would like to know how to treat the orchard to cure this trouble; also, does it spread through the orchard? There have been no oak trees on the place for 25 years.—Subscriber, Campbell.

Unless there have been other orchard trees on the place since the removal of the original oak trees—if there were any there—there may have been sufficient roots left in the ground to keep the fungus alive in the soil. If so, and the roots interlace, as they often do in an orchard, the disease may spread. If this is the trouble dying trees will usually show mushrooms or toadstools around the base of the tree. This mushroom is known as armillaria mellea and usually kills the tree in from two to four years, though it may remain alive for some years but will not thrive. Make examination of the roots. If affected with this disease they will probably be found to be decayed and soft, while just under the bark may be noticed fan-shaped pieces of white fungus. We believe there is no cure other than to remove the trees and keep the ground cultivated in vegetable or other crops which do not afford opportunity for the fungus to remain alive.

Worms in Cornstalks

Have been troubled this year with a long worm similar to the cutworm eating into stalks of young, growing corn. What is the remedy for this pest?—Subscriber, Azusa.

We think this pest could be fought most effectively by beginning very early in the season with poisoned baits put around the stalks on the ground. Formulas for poisoned bran or other poisons may be found in the Cultivator of November 4.

Onions Splitting

Can you tell me why about half of my Prizetaker onions split up into two or four small bulbs instead of one large one? They were grown from seed planted in September, then transplanted. There was plenty of rain all through the winter until March, which was quite dry and hot. Did not irrigate them at this time. After the April rains irrigated once a week. Bermudas planted at the same time and treated the same made large onions but of course were ripe long before the Prizetakers were. My soil is a light decomposed granite, fertilized with hen manure.—Subscriber, Fallbrook.

Mr. D. F. Reichard answers: "Prizetaker is a late variety of onion and should be planted not earlier than January. When planted as early as yours a late variety makes its nucleus but the cool weather of winter and early spring prevents its enlarging into a bulb, then when the warm

growing weather comes on this nucleus takes its second season's growth, so to speak, and breaks up or divides as a well grown onion does when put back into the ground the second year for seed."

Winter Pear

What pear would you recommend for this locality 16 miles from the ocean at an altitude of 600 feet, soil decomposed granite, not very deep, but no hardpan? Bartletts blight badly and I would like a later pear, one that ripens in September or October, good for table use or canning.—Subscriber, Fallbrook.

Mr. Reichard answers: "Use Winter Bartletts and spray if they are troubled with blight, using Bordeaux mixture. Begin spraying before the buds burst."

Olives Pitting

Am mailing you Manzanillo and Ascolano olives which are badly pitted. What is the cause and what will eliminate this blemish? Also, the olives are not sufficiently large before they ripen. How can I secure greater size?—Subscriber, San Diego.

The olives were badly bruised in the mail or else by wind on the trees before shipping so it is impossible to form a definite idea of the trouble. Will ask the subscriber to send more perfect specimens, if possible. As to size, the only suggestion would be deeper irrigation early in the season. The olive will grow and bear even if there is a slight shortage of moisture, but to secure good size there must be an abundance of moisture in the soil and in the growing of pickling olives a full supply of moisture is essential.



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

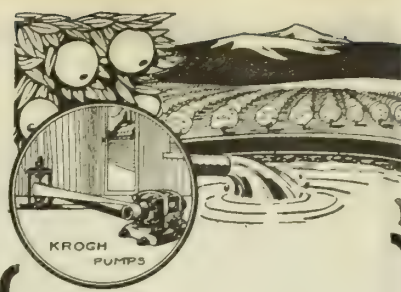
A Lazy Horse

I have a ten-year-old horse, weight about 1200 pounds, strong, healthy and well fed. Use him two hours a day for light delivery work. He is very lazy and persists in a slovenly jog unless I continually and severely apply the whip. Occasionally when he gets a little excited he can "travel like the wind." How can I make him adopt a faster gait without continually whipping him which looks cruel?—Subscriber, La Jolla.

Your method of driving will make any horse lazy. Throw the whip away, rein up his head and hold the lines so there is a little pressure from the bit all the time. He will go very slow at first but in time will wake up and drive like a horse. It may try your patience to work out this method but I never knew it to fail but once. Occasionally we find a horse that lacks good sense and can not learn.

ADD POULTRY AWARDS AT P. P. I. E.

In concluding Mr. Holman's short account of the poultry exhibit we stated last week that another week we hoped to give the complete list of awards. A few days after that issue went to press the awards were received and we found that it required a 62-page book to contain them and that one entire issue of the Cultivator would not be sufficient to give them all, therefore it has been deemed wise to omit them.



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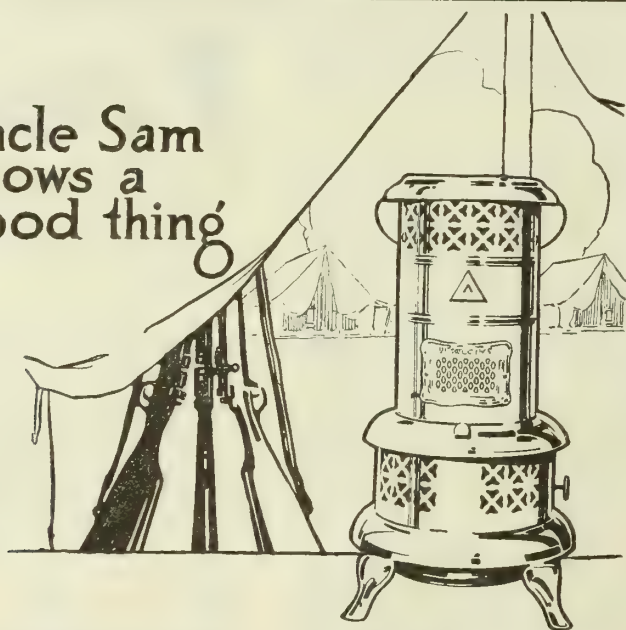
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—Julia Hall Bartholomew.

THE CROW IN AUSTRALIA



HE value or otherwise of crows in Australia is one of those debatable subjects that is a perennial source of correspondence from their admirers and enemies in the stock and pastoral newspapers," says a writer in the Agricultural Gazette of New South Wales.

"Many years ago I studied the habits of crows on the plains between Echuca and Kerang, when looking after ewes and lambs in times of drouth in Victoria. I held no brief for the crow, and hated that black, cruel, devilish bird, when I found the fallen ewe with her eyes picked out and the helpless lamb standing beside her, with holes pecked in its tail. One would often see a pair of particularly cunning crows separating a young lamb from its bewildered mother, the first crow flying beside the scared, running lamb, every now and then flapping its wings against the poor little beast, while the second crow would deliberately fly up behind and peck it on the rump to hurry it away from the mob. At other times one would come upon a lost lamb on the plains with a crow flapping round, and every now and then giving a tug to its tail to try and pull it to the ground.

"The sheep owners will tell you that a sheep or lamb pecked, when down, by crows seldom lives, and put it down to the fact that they are carrion feeders and cause blood poisoning. Of course, in bad times with starving stock, many of the old ewes and lambs that get down would never recover, even in the absence of the attendant crows, but such facts do not have much weight with the sheep man when he finds the crows helping in the survival of the fittest.

"The farmer dislikes the crows quite as much as the squatter, and seldom has a good word to say for them. If he runs sheep, he generally has more culls and old sheep in proportion to the size of his flocks, and they are the ones that suffer from the crows. The crow is also an expert at stealing eggs, and his depredations in the fowl yard are only too well known to the housewife. I used to visit a homestead on the plains in Victoria, where three crows formed a syndicate to raid the fowl nests in the stable, where they had the advantage of open gable ends, giving a ready means of ingress and retreat. Their method was as follows: the first crow flew into a she-oak tree overlooking the house and stable and finding all quiet, evidently sent back word, for the second crow flew up and took observations while resting on the roof of the stable; a fresh signal was sent back, when the third crow flew up, hopped down into the manger, and snapped up the egg before the hen had finished cackling, and flew away down the paddock, followed by the two scouts. Many traps and ambushes were laid for the egg stealers, but as far as I know my friend never managed to get the best of them.

"The crow is accused, probably not without reason, of destroying the eggs and nestlings of smaller birds, and it is quite evident that other birds do not trust him, for at nesting time if a crow comes into the tree, all the small birds join together to hustle and drive him away.

"While there is no question as to the damage the crows, when numerous, do at lambing time, particularly

in a bad season when ewes and lambs are weak and starved, during the other portion of the year in the same districts the crow acts as an effective scavenger in cleaning up offal and also destroys many noxious insects, hunting over the paddocks like the magpie, and is very busy when a cut-worm army or a locust swarm appears in the district.

"In conclusion, I would quote Mr. W. E. Abbott, of Wingen, who has always been a firm friend of the crow. After telling how he has found the remains of dead sheep picked clean by the crows, he says: 'It seems to me that that one crow with its unequalled sense of sight and smell, and power of locomotion, would be worth more than 100 men, whose work could not be supervised (in destroying dead carcasses). The 100 men would cost at least £200 a week, and a crow would keep himself to a small extent on eggs or chickens, and a few weak lambs or old sheep in times of drouth.'

"The bushman, while he is interested in the knowing ways of the cosmopolitan crow, does not particularly love that bird, but in his wanderings comes across him in all parts of the great lone land. It wakens him with its mocking, mournful cry when sick and weary in his lonely camp. If he happens to get lost in the scrub, hunting for his horses, away from water, the crows appear, and the inflections in their voices seem to distinctly change, no longer the sharp clear caw-caw, but these notes are long drawn out, sounding to the anxious, bewildered traveler in evil tone, 'When are you going to die—die?'

"Many are the stories told round the camp, regarding the wisdom of the crow, how when an inquisitive crow arrives at a camp where the traveler is resting under the trees apparently asleep, it will pick up a bit of dry bark in its beak, and flying up into the gum tree, drops it on the face of the sleeper to see if he is really asleep or only shamming, before it ventures to come around, and pick up the scraps.

"The outback bushman will tell you he has seen a crow when it has discovered the unprotected eggs in an emu's nest among the saltbush, hunt round for a stone, pick it up in its claws, and hovering over the nest, drop the stone among the eggs, and thus secure an ample dinner. This story may be quite correct—there is very little a wary old western crow does not know—but it lacks confirmation."

PREPARING THE AVOCADO FOR THE TABLE

Suggestions By the California Avocado Association

Served in Skin

Cut the fruit in half. Carefully remove the seed. Serve a half to each person with any of the following dressings, as personal taste directs: Lemon or lime juice, salt, sugar, tomato catsup, mayonnaise, French dressing.

Avocado on Toast

Remove the flesh with a spoon and mash with a fork. Spread thickly on a small square of hot toast. Add a little salt and pepper. This is one of the nicest ways of serving avocado.

Avocado with Caviar

Prepare as the above recipes direct. Spread a small quantity of caviar on top of each piece. This is a very delicious appetizer.

Avocado Cocktail

Cut the fruit into dice. Place in small cocktail glasses, cover with a good cocktail sauce. Tomato catsup with lemon juice and salt and pepper is excellent. Serve very cold, or packed in ice.

Celery and Nut Salad

Fill seed cavity of a half fruit with chopped celery and nuts mixed with a small quantity of mayonnaise.

Apple and Celery Salad

Take equal parts of chopped celery and apple. Heap in a lettuce leaf, cover thickly with avocado meat well beaten with a little mayonnaise. Lemon juice may be used if preferred.

Combination Salad

Make a good combination salad of green vegetables—peas, beans, tomatoes, cucumbers, celery, hard boiled egg, lettuce. Mix with one-half as much avocado meat. Season with French dressing.

On the Half Shell

This is only practicable with the thick skinned variety. Divide fruit in half, carefully remove meat, add yolk of a hard boiled egg and one tablespoon of French dressing for each fruit. Press through a sieve and pile back in the shell of the avocado. Garnish with boiled whites, finely chopped with parsley.

Cuban Salad

In the cavity of a small fruit place three stuffed olives, add lime or lemon juice. A teaspoon of sugar dissolved in the lime or lemon juice is very nice.

If You Care for Onions

Cut the flesh of the avocado in cubes, mix with chopped onions, lime or lemon juice and salt. A finely chopped boiled egg sprinkled on top makes it very pretty.

Aspic Jelly

One-half box gelatine, one-half cup cold water, one cup boiling water, two cups mashed avocado, juice of half a lemon, salt, cayenne. Soak gelatine in cold water one-half hour. Dissolve in boiling water. Strain and add avocado meat which has been flavored with salt, cayenne and lemon juice. Place on ice to harden. Serve with mayonnaise.

With Bananas and Apple

Take one chopped apple, one sliced banana and three medium sized avocados. Mix in a bowl with either French dressing or mayonnaise. Serve on lettuce leaf.

Sandwiches

A good hostess appreciates the value of an original and delicious sandwich. With rye bread—Mash the flesh of three large or six small avocados, season with lemon juice, salt and pepper. Spread between very thin slices of rye bread. A lettuce leaf may be used in the sandwich if desired. This makes about twenty sandwiches.

With Chili Pepper

Chop the fruit with chili pepper. Season carefully and spread between buttered bread, with or without lettuce leaf. The above recipe can be used with nuts or olives in place of the pepper or onions.

An Original and Delicious Desert

Avocado and chopped dates beaten in whipped cream slightly sweetened.

Avocado Ice Cream

Yolks of five eggs, one quart milk, green Maraschino cherries, two cups sugar, four medium-sized avocados, almond or vanilla extracts. Make a boiled custard with the milk, egg and one cup sugar, flavor with almond extract. When the custard is cool add the fruit and freeze. Serve with green Maraschino cherries on top of each dish.

Avocado with Sea Foods

A most appetizing form of serving the avocado is to mix equal parts of cold salmon or lobster with the diced fruit, and serve with mayonnaise.

In Soups

The avocado is used extensively in the tropics in all kinds of meat soups. Cut in small cubes and add to the soup just before serving.

For Invalids

The avocado is recommended by physicians as a most desirable form of food for invalids. It is highly nutritious, containing as high as 25 per cent of fat in the best varieties, according to government statistics, and yet is very easily digested, so that the most delicate person can eat it freely.

IDEAS FOR THE COOK

Written for the California Cultivator
By Isabel Cottle

Breakfast

Warm Stewed Prunes Cream
Hamburger Steak Baked Potatoes
Fried Mush, Syrup
Coffee

Lunch or Supper

Cream of Carrot Soup
Cereal Sausage Bean Loaf
Bacon and Cabbage Salad
Apple Cobbler Tea

Dinner

Scalloped Chicken and Kornlet
Mashed Potatoes Tomatoes and Okra
Diced Buttered Beets
Squash Pie Coffee

Cereal Sausage

Three-fourths cup hot, cooked cereal, one-fourth cup sifted bread crumbs, two cups crushed nut meats, three-fourths teaspoon salt, one-fourth teaspoon pepper, one-half teaspoon powdered thyme, one-half teaspoon powdered sage, one egg, beaten light. Cream of wheat or other cereal may be used; mix all the ingredients together and form into ten portions to resemble sausage links. Set on a greased pan and let bake about 20 minutes.

Scalloped Chicken and Kornlet

Use remnants of chicken from a roast or boiled fowl. Free the meat from skin, bone and unedible portions. For each generous cup of meat take one cup of kornlet and one cup of cream sauce. Mix the chicken with the sauce, then dispose in layers in a baking dish or in individual dishes, a layer of chicken in sauce and a layer of kornlet. Cover with buttered crumbs (one-fourth cup of butter to one cup crumbs) and let cook about ten minutes, or until hot throughout and the crumbs are browned.

Tomatoes and Okra

Use equal quantities of cooked okra in slices, and sliced tomatoes. For a generous pint of material melt two tablespoons of butter; in it cook a tablespoon each of chopped onion, green pepper and parsley. Mix half a cup of fine, soft bread crumbs with three tablespoons of melted butter; dispose the tomatoes and okra in a baking dish in layers, with chopped vegetables and crumbs sprinkled between the layers. Do not brown the onions and pepper, simply soften them

Continued on Page 551

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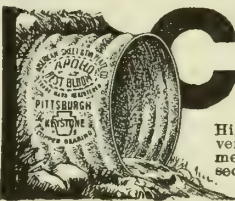
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When writing advertisers, mention The Cultivator.



San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Dec. 1, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 to 4 cents above following quotations:
Creamery Extras28
Firsts24

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies15
Arizona Longhorn17@17½
California Fresh17
Eastern Cheddar20@21
Domestic Swiss23
Eastern Daisy18
Eastern Twins18½
Imported Swiss40
Longhorn18½@19
Oregon Triplets17@18½
Tillamook18@18½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts42
Candled44@46
Northern Fresh Extras, f.o.b. S. F.49

Prices to producers:
Hens, lb.15@17
Roosters, old9
Broilers, lb.25
Fryers18
Roasters, lb.14
Turkeys16@19
Ducks15
Geese12
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.6.75
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug60
Rurals1.10@1.15
Merced, cwt.1.75
Idaho Russets1.60@1.65
Northern Burbanks1.50@1.65
Salinas1.85@1.90

ONIONS

Wholesale selling price:
White Globe, lug1.00
Brown Globe, cwt.1.25@1.35
Garlic1.5
Sets—
White, lb.8
Yellow, lb.7

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.00@1.25
Beets, doz.35
Beans—
Wax7@8
Limas7@8
Green7@8
Brussels Sprouts, lb.9@10
Cabbage, sack1.25
Northern, lb.2
Carrots, doz.30
Cauliflower, doz.65
Celery, doz.75@1.75
Chicory, doz.40
Chives, doz.1.00
Corn, lug.65
Cucumbers, lug.1.35@1.50
Egg Plant, lb.3@3½
Escarole, doz.90
Horseradish, lb.10@11
Leeks, doz.40
Lettuce, doz.30
Mint, doz.40
Okra, lb.10
Onions, Green, doz.20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone10
Peppers—
Bells5@5½
Chili, lb.5@5½
Pimientos, lb.6
Rhubarb—
Strawberry1.00
Winter Crimson85
Spinach, doz.20
Squash—
Crookneck, lug.60
Hubbard, lb.1¼@1½
Small Cream45
Summer, lug.1.00

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower1.10@1.25
Jonathans1.50@2.00
King David1.50@1.65
Pearmain, White1.00@1.25
Pearmain, Red1.10@1.15
Spitzenberg1.35
Yellow Newtown Pippins1.10@1.15
Bananas, lb.4½
Berries—
Strawberries, basket8@10
Blackberries, basket12
Raspberries, basket13@15

Casabas, crate2.50
Cranberries, bbl.11.00
Figs—
Black1.10@1.25
White85@90
Grapes—
Black Hamburg, lug75
Malagas, lug.1.25
Morocco, lug.1.00
Tokay, lug.1.35
Cornichon, lug.90
Red Emperor, lug.1.50
Guavas, lb.6
Peaches—
Clings, lug.1.00
Pears, Bartlett, packed box3.00
Winter Nells, lug.1.50
Persimmons, lb.6@7
Pineapples, lb.6@7
Pomegranates, half orange box1.50
Quinces, lug.50@75
Watermelons, lb.1@1½

CITRUS FRUIT

Wholesale selling price:
Lemons2.00@2.50
Juice Lemons1.25
Grapefruit, Seedless4.50@5.00
New2.75
Limes, basket1.00
New Navels3.50
Valencias4.50@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes8@9
Apricots9½@15
Peaches5½@7
Prunes, fancy pack5½@15

NUTS

Walnuts—
No. 11914 1915
No. 216.50 14.00
Buds12.00 10.60
Jumbos20.00 17.50
See almond quotations by Association under San Francisco.
Peanuts—
California, Raw5@6
Japan5½@6
Eastern6½@7
Chinese5
Pecans17

HONEY

Wholesale selling price:
Comb, Fancy Water White16
Extracted Water White7½
White7
Light Amber6
Beeswax25@26

RICE

Wholesale selling price:
California4.25@4.75
Broken2.75@4.25

BEANS

Wholesale selling price:
Limas5.25
Lady Washington6.75
Pinks5.00
Black Eyes4.00
Lentils17.00@20.00
Manchurian Reds4.00@4.25
Small White6.75
Garbanzos5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley14.00@15.00
Wheat Hay12.00@15.00
Tame Oat14.00@18.00
Alfalfa12.50@15.00
Volunteer6.00@8.00
Straw5.00@6.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow1.95
Corn, White2.05
Wheat2.05@2.10
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.50
Barley Seed1.65
Barley, Hulled1.95
Kaffir1.75
Milo1.60
Rye2.00
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal1.25

Bran, Heavy1.55
Alfalfa Molasses, per cwt.1.35
Beef Scraps3.05@3.15
Beet Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.00
Cracked Wheat, cwt.2.20
Cotton Seed Meal1.90
Bone, Green1.85@1.95
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.60
Rolled Oats1.80
Middlings1.80
O. & W. Middlings1.85
Feed Meal2.05
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Best Chick Feed2.80@2.90
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Nov. 30, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras28½
Prime Firsts25
Firsts24

CHEESE

Wholesaler to retailer:
Young Americas15½
California Flats14@16
New York Cheddar19
California Cheddar17½
Oregon Twins14½
Oregon Young America, fancy15

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh Extras57
Select Pullets50
Hens, lb.12@16
Fryers19@21
Broilers23@26
Roosters—
Young19@20
Old8@10
Squabs3.00@3.50
Turkeys—
Live Young19
Live Old17@19
Ducks10@13
Geese, pair2.00@2.25
Belgian Hares—
Live7@8
Dressed10@11½

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@9
Hogs4@6½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7½@7¾

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.25@1.50
Delta Burbanks, cwt.1.00@1.45
Sweets1.20@1.30
Oregon1.10@1.30
Idaho Rural1.00@1.10
Idaho Russets1.10@1.25

ONIONS

Wholesale selling price:
Onions, cwt.65@95
Garlic, lb.11@13

VEGETABLES

Wholesale selling price:
Artichokes, doz.20@35
Beans—
String, lb.7@10
Limas, lb.6@8
Wax, lb.6@8

Celery, doz.10@20
Cucumbers, doz., hothouse50@60
Egg Plant, lug.50@60
Lettuce, crates85@1.00
Okra50@75
Peas, Southern7@10
Peppers—
Bell, box40@50
Rhubarb1.00@1.25
Squash—
Summer, lug.1.25
Cream50@60
Hubbard50@75
Tomatoes, lug.65@1.00

FRESH FRUIT

Wholesale selling price:
Apples—
Newtown Pippins65@1.00
Pearmain, White65@85
Jonathans60@75
Bananas, Hawaiian, bunch75@1.75
Cranberries, Eastern, bbl.10.50@11.50
Oregon, box3.75
Grapes, all varieties, crates50@75
Huckleberries, lb.5@7
Pears—Winter Nells, box1.00@1.25
Persimmons, box60@1.00
Pineapples, doz.1.25@2.00
Pomegranates, half orange box75@1.00
Quinces, box75@1.50
Raspberries, chest6.50@9.00
Strawberries, chest4.00@5.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit—Seedlings—New3.00@3.25
Seedlings2.50@3.50
New Crop3.25@3.50
Lemons1.50@3.50
Lemonettes1.50@1.75
Limes, Mex., cs.5.50@6.50
Navels, new3.00@3.50
Valencias3.75@4.50

DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis in carload lots, 1915 crop: Santa Claras, 30-40s, 6½c; 40-50s, 5½c; other sizes, 5@5½c. All outside sections ¼c lower.
Other Fruits, Stand-Choice Fancy
50-lb. boxes4 c 4½c 5 c 5½c
Peaches7 c 8 c 8½c 10½c
Pears8 c 8½c 9 c 9½c
Apples7½c 8½c 9½c 10½c
Apricots7½c 8½c 9½c 10½c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5½c; 4-crown, 6c.
The above prices are for November, and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.
Nonpareil15
IXL13½
Ne Plus13
Drake's11
Langrudos11
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.85@4.95
Pink4.50@4.65
Black Eyes3.60@3.90
Cranberry5.50@5.60
Small White6.00@6.10
Garbanzos4.00@4.25
Large White6.00@6.10
Bayou5.50@5.60
Manchurian Speckled Bayous4.00@4.25
Red Mexican4.75@5.15
Red Kidney8.00@8.25
Horse Beans2.00@3.50

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White7@8
Light Amber4@5½
Dark Amber2
Beeswax25@28

HOPS

Wholesale selling price:
Sacramento Valley9@10½
Sonoma-Mendocino10½@12
Oregon-Washington10@12

HAY

Under date of November 27 Scott, Magner & Miller say:
Receipts for the past week were 2729 tons. Last week receipts were 2653 tons.
Railroad companies are now furnishing more cars and from now on we believe they will be able to continue to meet the demand.
There has been no trouble to place receipts and the tracks have been kept practically clear.
The market is firm, especially for the fancy and lower grades. Fancy types are ruling firm owing to the small amount of this quality; the lower grades are rul-

WEATHER CONDITIONS

For the Week Ending November 27, 1915

Report from the various California stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

—Rainfall Data—

Temperature Data

—Past Week—

	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Eureka	3.80	6.88	8.85	64	38
Red Bluff	.51	1.93	5.26	64	40
Sacramento	.03	.82	3.28	68	38
San Francisco	.07	.94	3.75	66	46
San Jose	.01	.23	3.92	70	32
Fresno	.02	.28	1.91	74	36
Independence	.00	.09	1.87	72	....
San Luis Obispo	.00	.34	3.34	76	36
Los Angeles	.00	1.34	2.11	76	44
San Diego	.00	.72	1.26	70	46

ing firm owing to the fact that stock throughout the country districts is consuming large quantities of this grade.

Trade throughout the interior continues good. Considerable quantity has been shipped to the southern markets, both Los Angeles and San Diego. Shipments are even reported to have been made during the week into the San Joaquin Valley, where, as a rule, there are large quantities on hand for shipment to this market.

Export trade continues good and with the prospective opening of the Panama canal on January 1, which the reports now indicate, this trade should improve very materially, shortly after the first of the year.

Receipts of alfalfa are small, demand good and arrivals have been placed readily.

Receipts of straw are small with very little demand.

We quote the average wholesale prices for hay in carload lots on today's market as follows:

Fancy Wheat Hay (16 bales)...	17.00@18.00
No. 1 Wheat or Wheat and Oat	12.00@15.00
No. 2 Wheat or Wheat and Oat	10.00@11.50
Choice Tame Oat	14.00@15.00
Other Tame Oat	10.00@13.50
Wild Oat	8.00@10.50
Alfalfa	10.00@14.00
Stock Hay	6.00@8.00
No. 1 Barley Straw	25@40

GRAIN

Alfalfa Seed	16@17 1/2
Wheat, Cal. Club	1.57 1/2@1.70
Blue Stem	1.77 1/2@1.80
Barley Feed	1.25@1.31 1/2
Shipping and Brewing	1.30@1.35
Corn, Eastern Yellow	1.66@1.67
New	1.55@1.62 1/2
Corn, Egyptian White	1.47 1/2@1.50
Oats, Red, Feed	1.25@1.32 1/2
Oats, Red, Seed	1.37 1/2@1.42 1/2
Oats, White, Feed	1.35@1.37 1/2
Oats, Black, Feed	1.50@2.00
Millet	2 1/4@3
Rape	2 1/4@2 1/2
Flaxseed	5@5 1/2
Rye	1.55@1.57 1/2

FEED STUFF

Wholesale prices	
Alfalfa Meal, car lots	16.50@17.50
Bran, ton	25.00@26.00
Feed Cornmeal	38.50@39.00
Cracked Corn	38.50@39.00
Rolled Barley, ton	27.50@28.50
Middlings	31.00@33.00
Shorts	26.00@27.00
Oilcake Meal	37.50@39.00
Cocanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 1, 1915.

The state is now sending out 700 or 800 cars weekly of navel oranges. The market is hardly established as yet, the sales having ranged from \$2.25 to \$3.00. Another week will give opportunity to judge more as to the early market's behavior. The outlook is good, however, and it is thought the holiday fruit will command a ready market.

The lemon market is rather stronger and it has every indication of still further improvement.

Shipments

Shipments of oranges from Southern California to date since November 1, 426 cars, lemons 326, total 752. To same date last season, oranges 275, lemons 284, total 559. From Central California, oranges 410 cars, lemons 39, total 449. To same date last season, oranges 397, lemons 59, total 456. From Northern California, oranges 101 cars; last year same date 131 cars.

NEW YORK, Nov. 29.—Ten cars Valencias, four cars lemons sold. Valencias higher on best grades; lemons strong.

VALENCIAS—	Avg.
Cal. Belle, S.T. Ex.	\$6.80
Carmencita, S.T. Ex.	7.55
Rooster, O.R. Ex.	4.75
Searchlight, O.R. Ex.	4.25
Glendora Heights, Foothill A.C.	5.35
Evolution, A.C.G. Ex.	4.80
Mother Colony, O.R. Ex.	4.80
Carnival, S.T. Ex.	4.60
Colombo, S.T. Ex.	4.25
Golden Cross, O.K. Ex.	3.95
Pronghorn, O.K. Ex.	3.40
Red X, O.K. Ex.	3.20
Hunter, A.C.G. Ex.	4.20
Gladolia, Covina Ex.	3.15
Gold Medal, xf, G.O. Groves.	6.60
Gold Medal, fy, G.O. Groves.	4.35
Silver Medal, G.O. Groves.	4.00
Old Mission, xf, Chapman.	7.90
Old Mission, fy, Chapman.	7.20
Golden Eagle, sd, Chapman.	5.65
Lady Rowena, Chapman.	4.70
LEMONS—	Avg.
Limoneira Co., selected (vent.)	\$4.20
Loma (vent.)	4.00
Pet (vent.)	3.80
Greyhound (vent.)	3.00
EE (vent.)	3.50
Santa Gertrude (vent.)	3.50
Sourballs (vent.)	2.95
Reliable (vent.)	3.45
Rex (vent.)	3.40
California (vent.)	3.15

PITTSBURG, Nov. 29.—Three cars sold. Market is steady on both oranges and lemons.

VALENCIAS—	Avg.
Cougar, Covina Ex.	\$4.25
Hill, O.R. Ex.	3.75
White C, Covina Ex.	3.90
LEMONS—	Avg.
Consul, Q.C. Ex.	\$3.55
Blue Flag	4.25
Red Flag	4.05
Silence	3.85
Cry Baby	3.70

ST. LOUIS, Nov. 29.—Market steady on Valencias.

VALENCIAS—	Avg.
5S Brand, O.R. Ex.	\$3.85
Banana Belt	3.50
Plain Ends	2.75

CINCINNATI, Nov. 29.—One car sold. Market strong on lemons.

LEMONS—	Avg.
Bridal Veil, V.C. Ex.	\$3.45
White Cross	3.20
Rough Diamonds	2.65

PHILADELPHIA, Nov. 29.—Two cars sold. Market firm on Valencias; strong on lemons.

VALENCIAS—	Avg.
Athena, Covina Ex.	\$5.10
Venecia, Covina Ex.	4.10
Florence, Covina Ex.	4.55
LEMONS—	Avg.
Wireless, L.G., F.G.A.	\$3.75
Growers	3.20

CLEVELAND, Nov. 29.—One car sold. Market is weaker on Valencias.

VALENCIAS—	Avg.
Colombo, S.T. Ex.	\$4.35

CHICAGO, Nov. 29.—Offerings of California oranges are very moderate and the stock is firmly held. Boxes fancy Valencias, \$4.50@5.25; common, \$2.75@4.00; Floridas, \$2.50@3.00; Satsumas, half boxes, \$1.75@2.50. Lemons, boxes fancy California, \$4.00@4.25; choice, \$3.75@4.00. Grapefruit, boxes, fancy Indian River \$4.00@4.25; Isle of Pines, \$2.00@2.50; Floridas, \$2.25@3.00. Kumquats, quarts, 15@20c. Grapes, cases 4 baskets, Malaga, \$1.25@1.50; Tokay, \$1.25@1.50; Red Emperor, \$1.15@1.50; fancy clusters, \$1.75; small drums, 50 pounds Emperors, \$3.50@4.00. Pears, boxes 50 pounds, Buerre de Anjou, \$3.75@4.00; Clairgeau, \$2.25@2.50; Winter Nelis, \$2.50@2.75. Pomegranates, half orange boxes, \$2.00@2.50. Apples, Western boxes, \$1.60@2.75. Casabas, flat cases, Golden Beauty, \$1.00@1.75; pineapple variety, \$1.75. Pineapples, crates, Hawaiian, \$3.00@3.25.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department. Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Exempt from Execution

A man having made a failure at ranching and not being able to pay his just and honest debts, how much would he be able to hold lawfully without danger of seizure?—Subscriber.

Household furniture is exempt from execution, farming utensils not exceeding in value \$1000, two horses or mules and harness and cart, buggy or two wagons, food for such animals for one month, provisions and fuel for individual use for three months; three cows, four hogs and piano, shotgun and rifle, tools of a mechanic, poultry of the value of \$75, earnings of a debtor for personal services for 30 days, except where debts are incurred for necessities of life then one-half of such earnings, shares in a homestead association to the value of \$1000, material to the value of \$1000, for construction of a building, machinery for constructing artesian wells to the value of \$1000, life insurance for annual premiums not to exceed \$500, shares of stock in a building and loan association to the value of \$1000.

The above is a synopsis of Section 690 of the Code of Civil Procedure, which does in fact provide more particularly for more of the exemptions. There is also a homestead to the value of \$5000 if married with a family dependent upon one for support and to the value of \$1500 if there is no such family dependent.

Installing Water Pipe

I would like to know if a water company is obliged to pipe the water to its patron's line? The water pipes would have to cross or come down the line between two patrons to get to my line. Who would have to pay for the pipe and meter?—Subscriber, Otay.

Under recent ruling of the railroad commission a water company which is a public utility is required to install and pay for service pipe and meter.

Road on Government Land

I have 160 acres of land purchased five years ago. Road we have traveled since purchase of land and for 15 years previously is across government land, until now unfenced. It is now taken up by homesteader who pro-

poses to move road quarter mile and put gates on it. Can I keep an open, public road where it is now, without gates and how?—Subscriber.

One cannot acquire a right by adverse possession of prescription against a sovereign state, so in the above case you have not acquired any rights across lands belonging to the United States government. A homesteader therefore takes his land free and clear of any assumed right of way which you have had across it.

Collecting Rent

A lets piece of land with house on for one year to B. When year is almost past B vacates house and lot, never having paid any rent. What can A do to collect the rent due him? If a tenant demolishes or damages the property what can owner do to get compensation?—Subscriber, Puente.

The owner can bring suit against the tenant to recover judgment for damages done to the property by him or for rent which he refused to pay. He has no further rights than any other creditor.

Wife's Signature

Wife refuses to sign deed to community property on mortgage. Is her signature necessary?—Subscriber.

The husband has the management and control of the community property with absolute power of disposition other than testamentary, as he has of his own separate estate, provided that he cannot make a gift of the community property or convey the same without a valuable consideration unless the wife in writing consents thereto. The above is taken from Section 172 of the Civil Code, which gives the husband the absolute right to deal in the community property either by deeding away real property or transferring personal property without the necessity of obtaining the signature of the wife to the instrument of transfer so that it is unnecessary to obtain her signature to convey a valid and perfect title to any portion of a community property. Title companies out of an excess of care invariably require the name of the wife to the deed, but this is purely for their own protection and is not a requirement of the law.

Employer's Liability

I have been working for a rancher six months and was taken sick on his place. Will this new liability law force him to pay me all or part of my wages?—Subscriber, Redlands.

The workman's compensation act, though broad in its terms, has not yet made the employer an insurer of the health of the employee. The only liability which the employer is under is for a personal injury caused by the employment.

New Dairy Law

Would like information as to the necessity of pasteurizing milk by a dairyman having one or two cows, where the milk is sold in his own immediate vicinity. If cows are tested according to the law which will be effective a few months later and the animals are found to react may one still sell the carcass to the meat market? Who determines as to the stock being infected, that is, is there a state deputy or does one employ his own veterinarian, and who bears the cost?—Subscriber, Azusa.

The act referred to, which goes into effect October 1, 1916, makes it unlawful for any person, firm or corporation, except in bulk to the wholesale trade, to sell for human consumption any milk from cows which have not passed the tuberculin test, until it has been pasteurized. It is further made unlawful to sell in any city or county in which a milk inspection has been established any milk otherwise than as graded and inspected in accordance with the provisions of the acts grading milk as certified and guaranteed, Grade A, Grade B and impure. If a dairyman operating in a district not under an inspecting department desires to sell milk he is permitted to file with the state veterinarian a written request for the tuberculin test and after filing such request he may proceed to sell milk until such time as the state veterinarian makes the test. Thus in case of

dairymen operating in districts not under a local inspection service the state veterinarian tests the cows. Where it is under an inspection department the veterinarian of the health department of that district, either city, county or group of counties, tests the cows. No provision has been found prohibiting the sale of the carcasses of animals found to be infected under the tuberculin test, but to be entirely safe on the matter you should correspond with the state veterinarian.

Selling Water

I supply my ranch with water from a canyon not on my land. At certain times I have more water than I need. Can I sell water to my neighbors on adjoining lands without obligating myself to furnish them water when I have none to spare or don't want to?—Subscriber, Hollywood.

By contract with your neighbors you would be entirely safe so far as obligating yourself to continue to furnish water to them is concerned. By selling water to your neighbors you would thereby become a public utility and subject to the jurisdiction of the state railroad commission and also of the state board of health.

IDEAS FOR THE COOK

Continued from Page 549

a little; cover the dish, and let cook about half an hour. If preferred the dish may be left uncovered and the last layer be of crumbs.

Bacon and Cabbage Salad

Broil four slices of bacon and mince it, mix with one-half cup of shaved cabbage and one-half teaspoon each of minced onion, beets, horseradish, a little paprika and a few drops of tarragon vinegar. Serve with a cooked dressing.

AGRICULTURAL ENGINEERS

The American Society of Agricultural Engineers will hold its annual meeting in Chicago, December 28-30. Special attention will be given to discussion regarding farm structures and machinery, with especial attention to tractors, their strong and weak points.

SUITABLE FODDER

The fifth day drew to its close with the twelfth jurymen still unconvinced. The court was impatient. "Well, gentlemen," said the court officer, entering the jury room, "shall I, as usual, order twelve dinners?" "Make it," said the foreman, "eleven dinners and a bale of hay."—Credit Lost.

Arizona will ship its wool clip quite freely to the Boston market. It is estimated that it will go at approximately 65 to 67 cents for cleaned wool.

CALIFORNIA WILD FLOWERS

Theodore Payne, a California wild flower specialist, with seed store at 345 South Main Street, Los Angeles, has prepared a 24-page illustrated booklet touching upon California's wild flowers. It gives a number of cultural notes, a classification of wild flowers according to color effects and an alphabetical list with short description and notes as to requirements. The book ends with a number of lists of seeds which make good mixtures for varying conditions. It also contains a list of California native bulbs. Mr. Payne has found it necessary to put a price of 15 cents on this catalog. Post paid to any address.

SAMSON SIFTINGS

The Samson Iron Works of Stockton is sending out Volume 1, No. 1, of Samson Siftings, devoted exclusively to the Sieve-Grip and other manufactures of the great Samson works at Stockton. It is a most creditable house organ.

"The Farmer's Friend"

In Handy Buckets Also Small Cans

Ask your Dealer

Protect Our Good Name

GOODYEAR
AKRON

STRIPPED to the waist, his huge torso streaming with sweat, a workman swings the heavy iron core to an iron table, and wrenches off a tire which has just come steaming from the heater.

His eye falls on the legend over his head, and he smiles.

Our good name is also his good name.

The two are intertwined.

He will protect the one, while he subserves the other.

His thoughts are—as they should be—chiefly of himself, of his little home, and of his family.

Their good name, his good name, our good name—his good work will stand guard over them all.

* * *

Two thousand miles away—in Seattle, we will say—the same thought, in the same simple words.

An irritating moment has arrived—the temptation to speak sharply to a customer, to fling a slur at unworthy competition.

The salesman, or the manager, or whosoever it may be, looks up, and the quiet admonition meets his eye.

Protect our good name.

In a twinkling it smooths the wrinkles out of his point of view.

He is himself again—a man with a responsibility which he could not escape if he would; and would not, if he could.

* * *

Back two thousand miles

again to the factories—this time to the experimental room.

An alluring chance to save—to make more profit by skimping, by substitution. No one will ever know. But—the silent monitor repeats its impressive admonition:

Protect our good name.

What chance to compromise with conscience in the presence of that vigilant guardian?

* * *

Thousands of men striving to keep a name clean.

And keeping their own names clean in the process.

* * *

We Americans, it is said, make a god out of business.

Let the slur stand.

Whether it be true or not—it is true that business is our very life.

Shall it be a reproach to us that we try to make business as good as business can be made?

* * *

Think of *this* business, please, in the light of its great animating thought: *"Protect our good name."*

We are thinking of you, always, when we say it—you American millions, and you other millions in the old world.

We think of you judging us, judging us—by what we are, by what we do, by what we make.

We think of tens of thousands of homes in which our name can be made to

stand for that which is worthy and worth while.

We must not lose your good will—we must not tarnish our good name.

* * *

You can call that anything you like.

You can call it business, or sentiment, or idealism, or nonsense.

It may be all of these.

It may even be that which our national critics call making a god of business.

But at least it gives to us a motive that is bigger and broader and deeper than money.

It makes thousands of men happier in their work and more faithful to it.

It has made of this business a democracy of united thought—a democracy of common endeavor—a democracy of purpose and principle.

* * *

And here is the oddest thing of all:—

The more we live up to this "impractical" ideal, the greater the business grows.

The more we labor for the future, the more we profit in the present.

The more we strive for character, the greater the reward in money.

The more we put into our product, the more we take out in sales.

Perhaps, after all, there is more than one sense in which it is good to make a god out of business.

We think so.

And we think you think so.

H. A. Dribbling, President
The Goodyear Tire & Rubber Co.

Visitors to the Goodyear factories are always impressed with a framed sign which confronts them at every turn.

In every room in every Goodyear building, they encounter the same message: *Protect our good name.*

It hangs on the walls of all the Goodyear branches throughout the country, and is being adopted by tire dealers everywhere as an expression of the spirit in which their business is conducted.

We believe that the public will be interested in the analysis of this simple but striking sentiment which is published here-with.

The Goodyear Tire & Rubber Co.
Akron, Ohio

H. A. Dribbling

President

CALIFORNIA CULTIVATOR

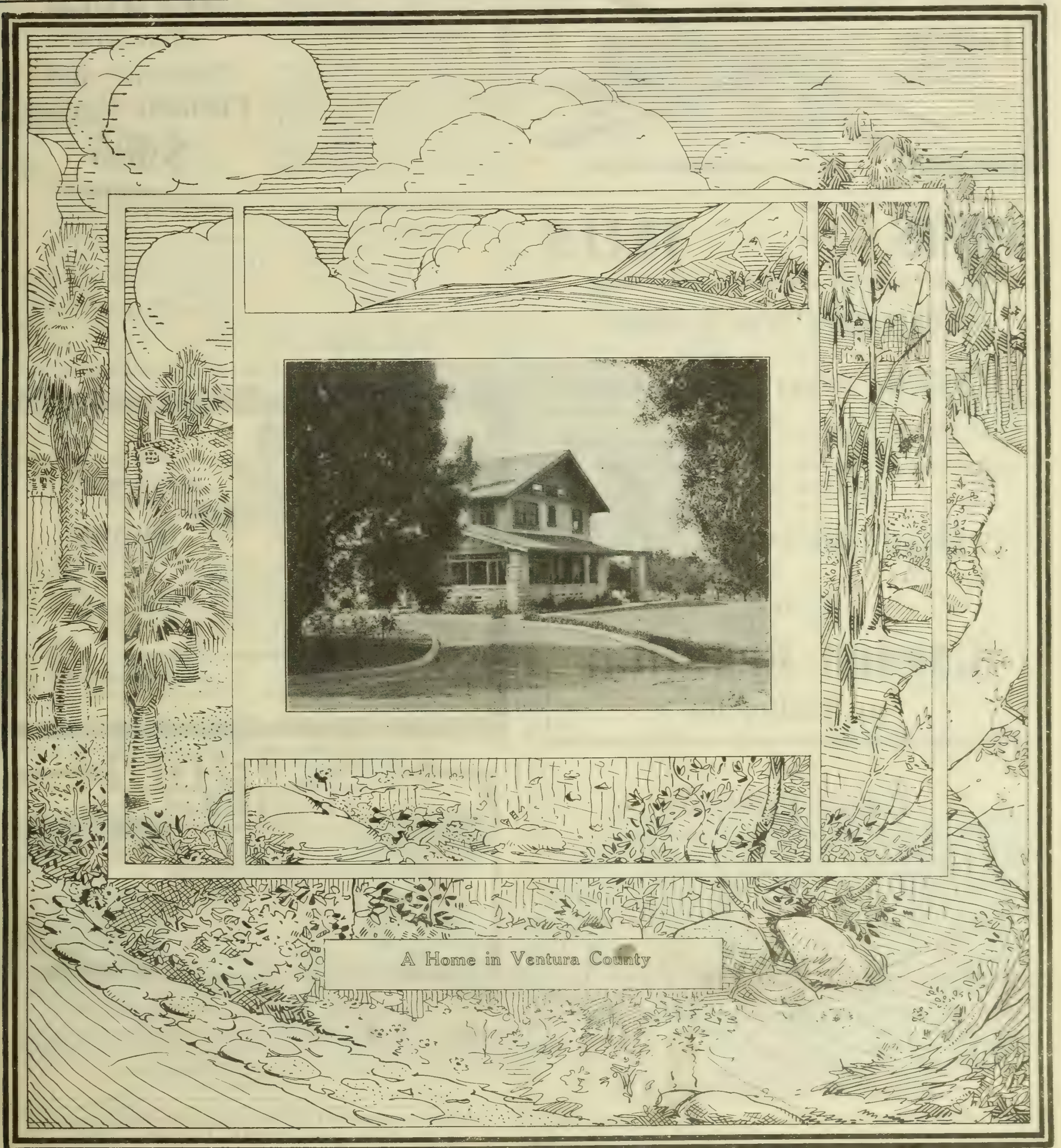
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

December 9, 1915

SAN FRANCISCO



A Home in Ventura County

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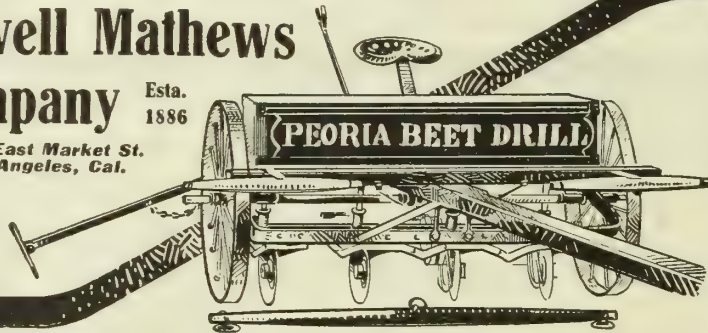
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Advertisements in California Cultivator are Guaranteed
See Announcement at Head of Editorial Page

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 24

LOS ANGELES: THURSDAY, December 9, 1915

One Dollar Yearly



Threshing Ventura County Beans.

Lima Beans in Ventura County

The Editor is Given a Ride Through a Little Section of Beandom and Observes Activities Which Bring Millions in Gold to California. Methods of Culture Described and Illustrated



HAT little triangular-shaped county sandwiched in between Santa Barbara and Los Angeles Counties which is called Ventura, has only about one-third of its lands tillable because so many of them "stand on edge," but these valleys and foothills are so wonderfully rich and productive that this county has become noted throughout the United States for its great production, especially of lima beans, of walnuts, and of lemons.

The county is one of the younger ones of the state, having been cut from Santa Barbara County in 1871. But some years before that it began raising the lima beans which, more than any other one product, have made it famous.

To be exact, in 1868 a man by the name of McAlister who lived in the town of Santa Barbara became friendly with the captain of a small trading vessel lying in the harbor for the purpose of trading South American products for hides, tallow and other California products. On one of Mr. McAlister's visits to the vessel the captain invited him to remain for a meal at which some exceptionally large beans were served, purchased by the captain in South American ports. He stated that they were ordinarily called in the markets of South America "lima" beans. Mr. McAlister begged a hatful of these beans for trying out under California conditions, afterward dividing them with Mr. Henry Lewis. From this small supply was created the great

lima bean industry of the county, the total acreage of which now approximates 67,000, with perhaps 10,000 acres still available for lima bean growing.

The county produced last year 1,200,000 80-pound sacks of limas. These were produced by about 600

Some of these lands have been persistently used for growing lima beans for more than 40 years and are yielding now so heavily that their owners are holding them at from \$350 to \$750 per acre. Nearly all of these profitable crops are produced without irrigation, for only about one-

sacks. While there have been produced as high as 45 sacks of limas such a production results only from a combination of exceptionally good season and best of care. The average production of black eyes is about 15 sacks on irrigated land and ten sacks on non-irrigated, with a record around 20 sacks per acre.

Asked as to preparation of land and the cultivation, Horticultural Commissioner Brock said: "The land is first plowed deeply in the fall and as soon in the spring as they can get on the land it is gone over with a heavy clod masher made for this work. The cyclone is then used and the chisel, harrow and weed knife. In all the ground receives from five to seven cultivations before the beans are planted. They then receive three cultivations on an average during the summer to keep down weeds—this is done with a cultivator made for that purpose. The beans in some sections are also hoed from one to three times where the morning glory is bad.

"So on the whole from starting in the spring to prepare the ground until the crop is ready for harvest from eight to 11 cultivations are given."

Bean planting may begin as early as April 1. Only one instance is known of beans having been planted in March, but early in April—in fact any time in April—is considered by many too early. May 10 is considered the ideal date, while June 10 to 15 is the latest planting date. Planting is done entirely by horse-planters, the

Continued on Page 562



A Ventura County Bean Field

As far as the eye can see over the hillsides these piles of beans show the result of the season's cultivation. The fields were plowed for this crop about one year ago and the harvest was only completed a few weeks ago. In the middle distance at the left may be seen the cook house and other preliminaries for the coming threshing outfit.

bean farmers. This year's output is not definitely known as yet. It will be somewhat lower, however, than last year. In addition the county had last year an output of about 500,000 sacks of black eyes. This year's output will be perhaps in the neighborhood of 450,000 sacks.

tenth of the lima bean land is fitted for irrigation. Where irrigation is practiced there is usually but one application.

The average production per acre on irrigated land is approximately 30 sacks, on non-irrigated land about 20



Types of Ventura County Bean Growers' Homes.

Ventura County has many home-like places, as shown on this and the cover page. The photo at the left shows the home of Mr. Geo. Gardner at Ventura; the center, home of Mr. E. S. Duval, Saticoy; right, Mr. C. J. Daly's residence at Camarillo. The photo on the cover is of the home of E. W. Gerry at Ventura.

For 1916 Planting Buy Only Teague Quality Citrus Trees

SWEET ORANGES:

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Mediterranean Sweet
Paper Rind St. Michael
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MANDARIN ORANGES:

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King Mandarin
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darin
Satsuma-Oonshiu

ORNAMENTAL ORANGES

Bouquet des Fleurs
Golden Variegated

COMMERCIAL LEMONS:

Eureka
Villa Franca
Lisbon
Variegated

STANDARD LIMES:

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Tahiti

STANDARD POMELOS:

Marsh Seedless
Imperial
Triumph

SAMPSON TANGELO CITRON OF COM- MERCE



Poor quality
balled tree.

Teague quality
balled tree.

Poor quality
bare root tree.

Teague quality
bare root tree.

Did you ever consider the importance of selecting your nursery trees for orchard planting? This, as well as BUD selection, careful growing and training, are the vital points to insure the future of your grove as a standard fruit producer and a paying investment. The more fibre roots you have on a tree the better it will transplant and the better it will grow and establish itself in the soil.

Write us the acreage you contemplate planting, the character of your soil and situation, and the varieties and number of trees to be planted and we will mail you gratis a copy of our book on "Citrus Culture", which describes the citrus industry from seed bed to bearing trees, harvesting, packing and marketing.

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Citrus

and

Tropical

Fruits

OBSERVATIONS BY EASTERN EXPERT

By Geo. T. Powell

(Continued from Last Week)



IN a study of productiveness of deciduous fruit trees, covering a period of over 30 years, the evidence has been pretty conclusive as to why, with the many millions of apple trees that for a half century have annually been planted, there has not been a larger overproduction of this most excellent fruit.

For this fact there are two causes; first, many trees that are planted never reach a bearing age, and second, many that do produce little or no fruit. Where but a few trees are planted for home use, if one fails to bear fruit it is quickly discovered, but in commercial planting, where large numbers are put out, the unproductive ones are not generally discovered or recognized.

Nearly 30 years ago when invited to deliver an address before a nurserymen's convention in New York, I spoke upon the importance and value of the propagation of a better class of trees, those of higher productiveness with more of fixed quality, which I believed could be obtained through a system of careful bud selection.

There were a few nurserymen present who agreed with the proposition, while a number took issue against the principle as being of no value.

After a full discussion of the subject from the floor of the convention I gave one of the leading nurserymen present an order for 150 Northern Spy apple trees, as a strong foundation stock, and went with him personally to select buds from a very fine individual Sutton Beauty apple tree which for a number of years I had observed upon his place at Geneva, New York. Buds from a Thompsons County King tree of known quality were also selected, and the nursery trees budded with these two varieties.

The King is one of the choicest apples that is grown, of fine flavor, size and color, but as ordinarily propagated is of no value for commercial planting because of inherent constitutional weakness and susceptibility to canker which destroys 50 per cent of the trees before they reach profitable bearing age.

Through the selection of a strong vigorous stock and buds from a strong individual tree that has reached 30 years of age, untouched by disease, this block of trees, now nearly 30 years old, has produced heavy crops of fruit annually for a quarter of a century, with every tree yet sound and free from even a cankered limb.

The Sutton Beauty has been carried to the third generation through this method of bud selection, and in the third orchard so propagated every tree looks as though it has been cast in the same mold, so uniform is it in production, and in the general character of the fruit. Buds have been obtained from these trees, and I have since been obliged to forbid some nurserymen from advertising their stock as pedigrees from my bud selection. They at least believe in them for making sales.

In the observation and study of the orange and lemon trees of California I found the same conditions as with our deciduous trees in the orchards of the East, some highly productive and many unproductive under the same soil and general cultural conditions.

I was much interested and quite surprised to meet a number of growers, and also a few nurserymen, who were propagating trees through bud selection, and who were able to show the evidence of its value.

One of the oldest and most enthusiastic growers of the state who has built up fine orange and lemon orchards with trees grown from carefully selected buds took great pains to show blocks of the most beautiful and highly productive trees that I have ever seen.

Trees were shown for comparison that were full of rank growing, unproductive wood with little fruit, of coarse, undesirable quality, while large blocks of trees were seen, that showed uniformity in large and regular production of fruit of the highest quality in market value. These trees were perfect in form, with a right distribution of fruit bearing wood upon which a pruning knife had never been used except to remove an occasional undesirable branch which the grower was able to recognize as of an unproductive type that later would require unnecessary time and expense to remove.

This grower, past 70 years of age, had studied so closely every tree on his place that the first year after planting, he feels certain that he can determine the character of the new growth, and with a pocket knife takes out the undesirable branches that later would require a useless expenditure of labor and cost in pruning.

In propagating new trees he selected the buds from such trees only, and in the third year they made a uniform growth which had paid the entire cost of their culture.

The value of bud selection measured by the results obtained by this very intelligent grower seemed substantially confirmed when later I looked over thousands of trees that at a large cost were being heavily pruned of unproductive wood.

One of the most interesting and instructive lines of work that I saw was that being done by Mr. A. D. Shamel at Riverside. He is a representative of the department of agriculture at Washington and is making the most extensive, systematic and scientific investigation of the law of variation in the productive properties of citrus fruit trees ever attempted.

After spending considerable time with Mr. Shamel studying his work and his records thus far obtained and observing the productive and unproductive citrus trees in extensive acres of orchards, it was clearly evident that there were sufficient unproductive trees upon many acres to bankrupt the growers who owned them when prices are low, even with the best cultural methods they may employ.

If all of the trees were of the same character as many of the very highly productive ones that were examined

there would be a satisfactory return even under the present low prices for oranges and lemons. The experiment station at Riverside is working upon some most important problems in relation to soils, cover crops, fertilizers and cultural methods.

Overproduction of Citrus Fruits

The question was frequently asked by growers if this great industry were liable in the future to suffer from overproduction? That was a most difficult question upon which to give an opinion, but there were a few points upon which I did venture to give judgment, among which were, that land in the future must be purchased at its normal value by those who were interested in the industry; that land best suited to that class of trees and production should be carefully selected; that those interested to invest should go to the organized industry for information rather than to real estate sources with little or no knowledge of the business and where interest only is in the sale of land; that in the state university, experiment station and the state commission of horticulture there are men among the ablest in our country who could give information and advice that would be of real value to all purchasers of land; that the citrus industry through the California Fruit Growers' Exchange has the most complete and efficient selling organization known in the world; and that the producers need only to make their product such as the buyers and consumers demand and then for many years to come there should be satisfactory profits in the business.

Your laws are exceedingly well enforced against insect pests, tree and plant diseases, adulterated seeds and quarantine requirements. It was refreshing to meet instances where inspectors from the horticultural commission were treating trees on the property of private owners who had failed to comply with the law, the expense for which their property had to meet.

This was in striking contrast with the millions of valuable trees in the East that are allowed to be ruined by the San Jose scale, the tent caterpillar, and other insects destructive to vast property interests, through the inactivity of the state departments of agriculture in enforcing the laws.

The reason for this most unsatisfactory condition in the nonenforcement of agricultural laws in the East, and there are good ones on the statute books, is that fruit culture as yet is largely a secondary interest and there is not sufficient sentiment to demand of agricultural departments more rigid enforcement.

I met a number of your county commissioners and inspectors of nursery stock at their work, who were men quite above the average in knowledge, ability and efficiency and were actively and intelligently upon their jobs.

Connected with the subject of overproduction are some vital economic problems that are receiving much attention. So long as there are vast numbers of people in our country who are suffering for food and who have to be fed through charity there is no overproduction. There are great numbers of people out of employment. Our country is suffering from underconsumption, not overproduction. Practically every line of business has been obliged to cut down expenses and to reduce employes because of lessened demand for its output. This is true of other countries. For a number of

years government commissions have been appointed to investigate the causes of the general worldwide business depression.

The future has in it substantial promise of prosperity that will be more permanent and uninterrupted through a more general opportunity for productive labor to share in its fruits, and more fully in the wealth that should enable every industrious person to become an independent, self supporting, self respecting, patriotic and loyal citizen of our country.

With these conditions coming no one need fear the permanent overproduction of oranges or lemons or of any commodity that will add to the needs or the pleasure of our rapidly growing population.

Among the many interesting things that I met during my stay in your state of great accomplishments none

interested me more than the people. Your educational system is exceptional and it tells in the high degree of intelligence, in the energy, and progressive spirit of your citizens.

By the courtesy of the board of directors of the California Fruit Growers' Exchange I was invited to attend and to sit through several executive meetings. In doing so I gained much valuable knowledge of the manner in which the many intricate and difficult problems of the exchange were handled where the interests of over 7000 producers were involved. I was greatly impressed by the efficiency and the interest exhibited on the part of so large a number of representative business men who were giving so much of their time and best thought to one of the great industries of the state.

When corporations generally recognize the spirit of true cooperation that extends its interest to every member who is a factor in the success of their

work, then will discontent and disaffection cease, and the highest satisfaction follow in the results that are produced.

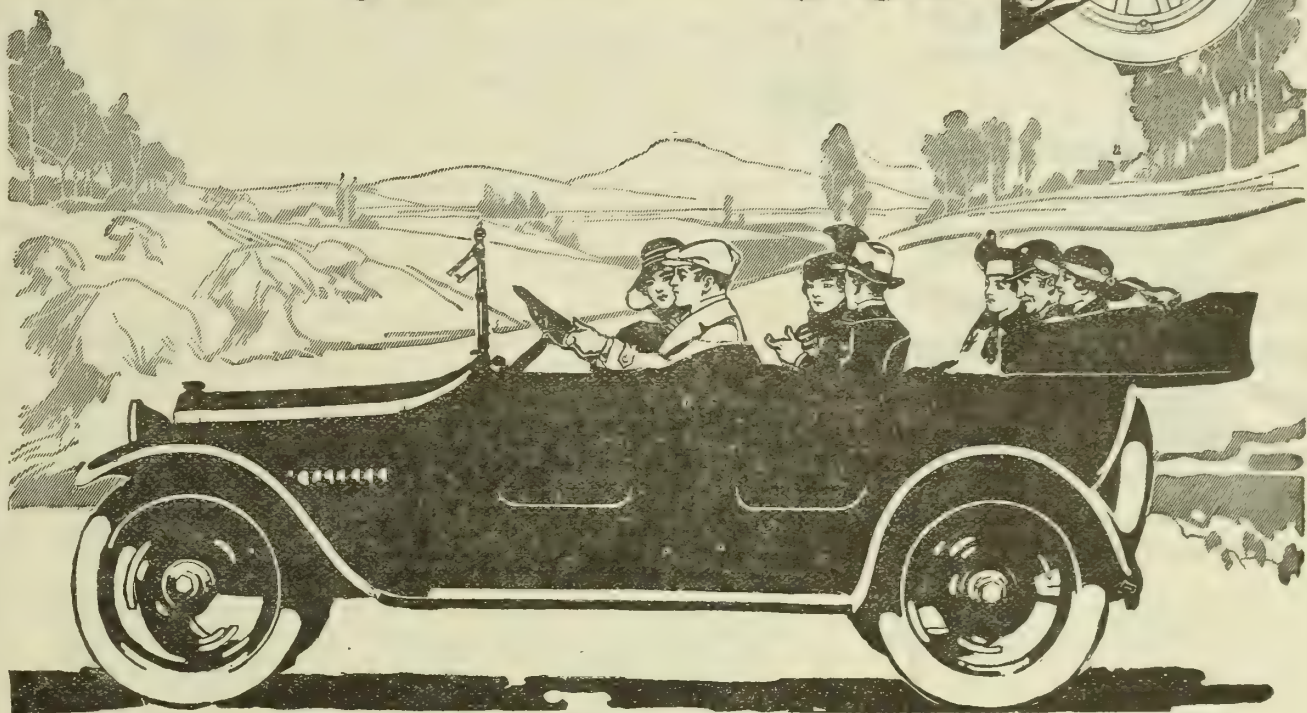
IRRIGATING OLIVES

Touching upon the production of olives Deputy State Commissioner Weldon refers to the fact that Tehama County, which ties Riverside County for second place in the olive production of the state, has a very light crop following the heavy crop of last season, he adds:

"County Horticultural Commissioner Weeks states that irrigated olive orchards have about 60 per cent of a crop, while non-irrigated have only 30 per cent. The great necessity for irrigation is thus plainly indicated. Fresno County will harvest the third successive normal crop."

It is true of nearly all fruits that they require, while maturing one crop, sufficient moisture for the immediate needs and, in addition, the vitality of the tree must be sustained as a foundation for the next year's crop.

FORTY Horse Power 7 passenger FOUR \$885



Comfort -for SEVEN full-grown people

Famous as this Studebaker 4-cylinder car has become for its abundance of POWER, it is just as noteworthy for its COMFORT-giving capacity. Price has been reduced \$100—from \$985 to \$885—but the capacity of the car has been GREATLY INCREASED. It is built for SEVEN people's comfort. And it is the ONLY 7-passenger 4-cylinder car that has ever been offered in America or Europe for less than \$1000.

The wheelbase has been INCREASED from 108 to 112 inches. The tires have been INCREASED from 33 x 4 to 34 x 4 Goodrich. The spring suspension has been greatly improved. The depth of upholstery has been INCREASED. And the auxiliary seats fold down into recesses in the floor of the tonneau completely out of sight. Not a detail has been overlooked that adds to riding-comfort.

With such COMFORT, this Studebaker combines POWER that no car at its price can equal—FULL 40 horse power—and a motor that equals most of the Sixes now on the market in Power and flexibility. And in quality, it stands supreme in the 4-cylinder field. For while its price has been reduced \$100—from \$985 to \$885—it has been greatly increased in power, size and quality. And wherever materials were changed, BETTER materials were used. As for example, the upholstery which is the finest, hand-buffed, semi-glazed leather.

For more than half a century that name of Studebaker has stood for sterling quality—for mastery of the world's most difficult transportation problems. You know, as your fathers before you knew, how Studebaker products STAND UP thro' any tests—and now can you wisely buy any car until you have seen this latest and best Studebaker and KNOW the GREAT value that it offers? See the car at once—and write for 1916 Catalog

STUDEBAKER

South Bend, Ind.

Detroit, Mich.

Walkerville, Ont.

Address all correspondence to Detroit—Dept. F 20

More than 200,000 Studebaker Cars now in use

Four Cylinder Models

Touring Car, 7-passenger \$885
Roadster, 3-passenger - 850
Landau-Roadster, 3-pass. 1185

Commercial Cars

Panel Delivery Car - - \$875
Open Express Car - - 850
Station Wagon - - - 875

Six Cylinder Models

Touring Car, 7-passenger \$1050
Roadster, 3-passenger - 1000
Landau-Roadster, 3-pass. 1350
Coupe, 4-passenger - - 1550
Limousine, 7-passenger - 2250
F. O. B. Detroit



Stop Losing Money

If your clipper bruises an orange's skin you open the way to decay. The cut may be too small to notice—one decaying orange may spoil an entire box.

You won't bruise fruit if you use **WISS ORANGE CLIPPERS**

The blades are specially curved and ground; the points and outer edges are rounded to avoid bruising.

U. S. Government experts and leading citrus growers everywhere endorse Wiss Orange Clippers because they last longest, do best work and save money by minimizing the liability of bruising the fruit.

UNRESTRICTEDLY GUARANTEED

For Sale By All Dealers

J. WISS & SONS CO.

19-33 Littleton Ave.,
Newark, N. J.

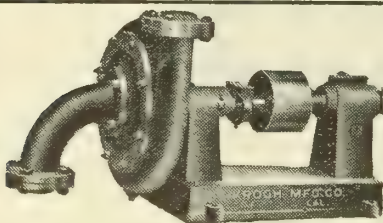


Successful Orcharding

is the result of successful tillage. Cultivate your trees as you would your corn—use an "Acme" Orchard Harrow. It gets in close under the branches. Cuts, slices, turns the soil twice, levels and compacts—all at one operation. Many sizes—extension and regular. Kills small weeds, cultivates deep, mulches thoroughly. Send for new free booklet—now.

Duane H. Nash Inc.

651 Brannan St. No. 23 San Francisco California



Krogh Pumps

have served the California irrigators satisfactorily for over 38 years.

WRITE US YOUR REQUIREMENTS

Krogh Mfg. Co.

San Francisco—Los Angeles

When writing advertisers, mention the Cultivator.

Deciduous

Fruits

MARKETING CALIFORNIA WALNUTS

Written for the California Cultivator
By J. G. Berneike



EALLY it gives one pain to think of the time when growers received about five cents per pound for their walnuts. It was so painful to the growers of that day that they concluded they would apply some remedy for the pain. And out of this grew the associations. They have had their ups and downs, but they seem now to be firmly established. Whereas each association acted independently at first in selling, turning the selling end of their business over

however, there has been some progress in the right direction, for there is a gradual growth of the associations and the coast packer has been eliminated. There are more associations today with a larger average membership. The sale of labeled package goods to consumers is preparing the way to deal more directly with them whenever the associations are ready to grasp the opportunity. In dealing directly with the consumer the article of consumption must be standardized as to price and quality, especially as to the latter. This is being accomplished by the establishing of the brand known as "California Diamond Brand Walnuts" or a guaranteed

TRADEMARKED-ADVERTISED MERCHANDISE

R. V. Holland



WE often talk of a man making a name for himself. By this we mean that John Smith, for example, has excelled in his particular calling and that his name stands for par-excellence in the field in which his reputation is known.

People who have occasion to utilize the services or seek the advice of anyone in John Smith's line naturally look to him for the very best service obtainable.

If he happens to be a lawyer we look upon him as authority in matters pertaining to law and when in need of legal advice of importance we go to him.

Why don't we select Tom Jones, Bill Brown or some other lawyer from the many whose advice can be obtained—usually at a lower cost than John Smith's?

For the simple reason that John Smith has earned a reputation for legal ability which is within itself an assurance that we will get efficient, reliable service and advice from him, whereas, in the employment of other lawyers of unproven ability we must assume a risk which, if we have much at stake, is both unwarranted and unwise.

It is possible that some unknown lawyer might serve us to as good advantage as John Smith, but we don't know it and we simply cannot afford to take the chance.

Surely no good farmer would plant seeds of doubtful worth. There would be no good reason for his doing so. There are too many standard brands of seeds, results from which he can absolutely depend upon under proper conditions.

The same principles apply to merchandise in every line. The markets are full of goods of proven worth and those consumers who have devoted much study to the matter have become convinced that it invariably pays to buy products, the producers of which have made a reputation for them. Experience has taught them that goods of known quality not only afford consumers ample protection against deception from a merchandise standpoint, but insure an equitable charge as well.

Cultivator readers should be able to secure standard products in every line from their local stores.

Advertisers of standard products in our columns offer your merchants the same inducements to handle their lines as they do merchants anywhere else. All of our advertisers are reliable, otherwise we would not accept their business.

We are spending a great deal of money in an effort to improve merchandising methods in this field and, of course, consumers will be the largest beneficiaries from this work.

You can assist us materially by demanding brands of goods advertised in the Cultivator, and at the same time buy with the assurance that you are getting value received for your money.

to some large California packer on a commission basis, the different associations of the state for the last three years have maintained a common sales agency with headquarters in Los Angeles. And for the past two seasons they have sold directly to Eastern brokers without the intervention of California packers, with a saving to themselves. But let us not say that we have reached the limit of perfection.

In the first place, while a majority of growers now belong to the associations, and while the bulk of the crop is handled by them, there are yet too many outside. Occasionally some of them get a better net price than members of the associations. This is apt to stir up dissatisfaction, but the average, however, is generally less.

In the second place, we have not yet come as close to the consumer as we should come. In both respects,

cracking test. The 100-pound sacks going to dealers and the packages sold to consumers all bear the Diamond brand. As long as the associations strictly maintain the guaranteed standard, just so long will the public have confidence in this brand and call for it. While the dealers have had a chance to judge of this brand for quite a number of years, in buying the 100-pound sack the general public had its first introduction to it in 1914, and is having it on a large scale in 1915. Nearly 3,000,000 packages, mostly of the one-pound variety, have been ordered by the trade, and the headquarters of the California Walnut Growers' Association at 823 Traction Avenue, Los Angeles, is a very busy place, for here about 80,000 packages a day are put up.

Heretofore when consumers bought walnuts in the East they could not tell where they were grown. There could

TREES

Fruit and Ornamental

We grow everything that grows, and can supply your wants complete in every line. Write us when in need of nursery stock of any kind—or better yet, send us your list of proposed needs for prices and suggestions.

APPLES

PEACHES

PEARS

PLUMS

QUINCES

LEMONS APRICOTS

ORANGES PRUNES

POMELOS WALNUTS

OLIVES ALMONDS

GUAVAS PECANS

CHERRIES LOQUATS

GRAPES CHESTNUTS

ETC. FIGS



Our nurseries are the largest in the West—located in the most favored spots of California. Roeding's true to name trees are famous for their splendid quality.

Write for Free Annual Illustrated Price Catalogue

listing and describing over 2000 varieties of trees and plants, including both deciduous and citrus, ornamental, palms, shade trees, roses, etc.

If you live in Southern California, and it is more convenient to do so, call on or address our representatives—Roeding & Wood Nursery Company, 1607 E. Washington St., Los Angeles, who will give you every want careful consideration.

PAID UP CAPITAL \$200,000.00
FANCHER CREEK NURSERIES
GEO. C. ROEDING, PRES. AND MGR.
Box 12, Fresno, California

Send For Your Copy

of a practical book on tillage, issued by a firm who have for nearly 50 years studied every phase of cultivation and who made the tool that's the favorite of thousands of farmers—the original CUTAWAY (CLARK) Disk Harrow. This is a textbook—not a catalog—and it's free. Send for it. Learn the reason for intensive tillage. Learn why the Disk Harrow is used and how it acts. It's the tool of many uses on farm, orchard, garden and cut-over land. It makes perfect seed beds, saves time and labor, and lasts a lifetime. With the book we send our new catalog. Write for both of these valuable books NOW.

The Cutaway Harrow Company
977 Main Street
Higganum, Conn.

E. P. BOSBYSHELL CO.

General Agents

Clark's Harrows

Dealer in Farm Implements, Vehicles and Road Grading Machinery

125-127 North Los Angeles Street **Los Angeles**

be no better advertisement devised for California walnuts than these attractive packages. If they are satisfactory to the consumer he knows what to call for when he wants more like them, and he will shun buying in bulk unless well assured that they come under the same brand. The grower must see to it that the high standard for this class of goods is rigidly maintained.

How large a crop can be marketed must depend upon the demand. The demand can often be largely increased by teaching new uses for the same thing. Hence the importance of placing in these packages a small booklet of good and tested recipes.

These packages offer the opportunity of advertising to the consumer the walnut byproducts of the associations, an experimental beginning of which is now being made. And these in turn can be used to advertise the walnuts.

Some time ago I pointed out through the columns of this paper how walnut growers and dried fruit producers might work together in a mutual advertising campaign which would help ultimately to unite growers on the same selling agency and to bring our products closer to the consumer. This will no doubt be brought about in course of time. It may require some strong hand to take the initiative. Meanwhile we shall wait patiently for such a happy conclusion.

MAKING BORDEAUX

Written for California Cultivator
By Pedro A. Bovet, Director of the
Agricultural Experiment Station in
Buenos Ayres Province,
Argentina

Referring to the question and answer on "Permanent Bordeaux" in Cultivator of August 26, 1915, just received, allow me to say that:

I think decidedly from my own experience that there is nothing like preparing one's own Bordeaux spray with quick lime, slaked by oneself also, to obtain good spray which sticks splendidly, especially on peach trees. The good lime slowly and patiently slaked is therefore a first condition. The same is true for paste.

Now, for the satisfaction of your inquiring subscriber and other orchardists, let them further know the fact that a certain amount of casein (a cheap byproduct of milk) added to Bordeaux spray will increase its adhesive and wetting power. This has been tested by Messrs. Vermorel and Dantony, with whom we have corresponded regarding another fact which they these very last years established simultaneously through conscientious outside trials. This addition of casein to an alkaline (properly made) Bordeaux spray permits of reducing the percentage of sulphate of copper from two or three to one per cent, and even as low as one-half per cent without lessening its fungicide properties.

Orchardists and viticulturists will seize the economical importance of such a reduction for European and South American conditions, where copper sulphate actually costs 75 pesos Argentine currency per 100 kilos (more or less \$30 gold American) owing to war conditions!

The method of preparing caseined Bordeaux spray which has greater wetting and adhering power is, as indicated to us by Messrs. Vermorel and Dantony: Stir and mix thoroughly together in dry state 50 grams of powdered casein and 100 grams of rich powdered lime. Add very little water so as to obtain a paste. Little

by little dilute this paste by gradual addition of more water in small quantities until a total volume of one liter is obtained. The absence of clods in the bottom of the container will show that the dilution has been properly made. Greater quantities of this solution may be prepared in advance.

For use add one liter of casein solution to every hundred liters of common alkaline (turns litmus paper blue) Bordeaux spray, when it will be ready for use.

As you see, it is very cheap and easy to prepare. It would be decidedly interesting for orchardists to make a trial caseining not only the Bordeaux usual formula, but Bordeaux in which copper sulphate has been reduced (also lime, of course) to one per cent and caseined also.

These trials would be especially interesting for us against peach leaf curl and mildew in vines.

There is no apparent reason either against adhering and lasting properties of Bordeaux dressing for trees being also increased by addition of casein solution. What about trying?

SPRAY ALMONDS AND PEACHES FOR BLIGHT

Harry P. Stabler, horticultural commissioner of Sutter County, is sending out the following warning:

"Peach blight has done much damage to almond trees during the past two years and has seriously injured the crop. While peach growers have usually sprayed their orchards at least once during the season for blight, many almond growers have entirely neglected their trees in this re-

gard until the blight has become a serious menace.

"All almond trees should be thoroughly sprayed between November 1 and December 15 and again just before the trees bloom. The first application may be either Bordeaux mixture or lime-sulphur, but the second spraying should be done with lime-sulphur."

TO REESTABLISH RUINED VINEYARDS

Two hundred thousand acres of vineyards planted with European vines, it is estimated, have been destroyed in California by phylloxera since its introduction into this country. Except in the case of vineyards which can be flooded cheaply and the insect killed in this way, the only means of reestablishing these vineyards is to grow the European varieties on native stocks that are resistant to phylloxera.

To assist grape growers to do this the department of agriculture has just published Bulletin No. 209, "Testing Grape Varieties in the Vinifera Regions," which records the results of investigations carried on at a number of experiment vineyards in the years between 1909 and 1913. The chief feature of this bulletin is a series of extensive tables showing the behavior of the important European varieties of grapes when grown on their own roots and also when grafted on the various stock varieties whose roots are resistant to phylloxera. It is of course important to know the relative relationship of stock and scion and the behavior of each variety towards the resistant stocks on which it may be grafted, and it is this information which the tables already mentioned furnish.

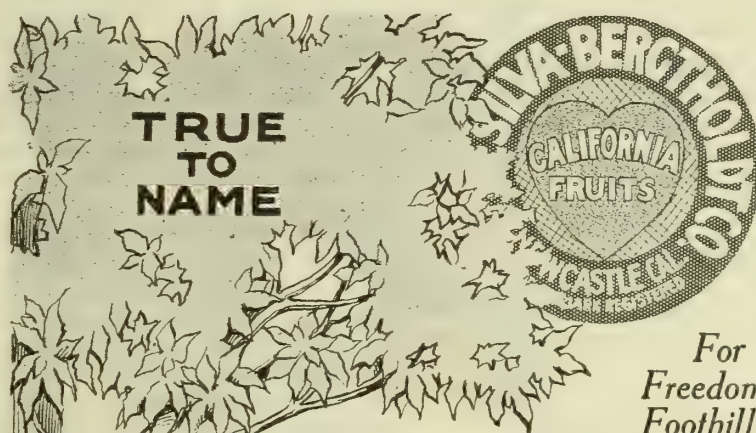
In the past the lack of this information as to the best varieties and stocks for special conditions has rendered useless the efforts of grape growers to reestablish vineyards which have been destroyed by phylloxera. The growers planted varieties that were not resistant, or used the wrong resistant for the locality, or selected stocks that were not suitable for the varieties grafted on them. These and similar mistakes have prevented the more widespread use of resistant varieties as stocks. The information now collected and published by the department of agriculture, however, should render such mistakes unnecessary in the future.

CYANIDE KILLS ANTS IN SEED BEDS

Ants like to get into seed beds and carry away the seed. They also cause trouble by making their nests in the bed. All nests in the vicinity of the bed should be destroyed before it is made. J. R. Watson, entomologist to the University of Florida experiment station, recommends that a solution of potassium or sodium cyanide in water be used in destroying the nests. The sodium cyanide is probably cheapest now since the price of potassium is up.

Punch a hole about a foot deep through the main entrance with a stick and pour into it a few fluid ounces of the solution. When the liquid has soaked in cover the hole with earth and tramp the surface solid. The gas given off will penetrate the galleries and kill all the adults and pupae in the nest. This should be done at night or in the early morning when a large majority of the ants are at home.

Carbon bisulfide can be used in the same way but it is more expensive, and highly inflammable. Kerosene may be used but it is not quite so effective and does not penetrate so readily.



"Behind
each tree
is our
guarantee"

*For Well-Branched, Fibrous Roots,
Freedom from Disease and Hardiness,
Foothill Grown Trees Have No Equal.*

Order Your Trees While Our Assortment is Complete and Take Advantage of Our Special Prices

Fruit Growers know the merit of our foothill grown stock and the advantages that the early buyer gets both in price and selection. Planting is going to be heavy this year, and tree stocks are short of last year, so make your selection now and avoid disappointment.

HERE ARE A FEW OF OUR SPECIALTIES

PRUNES

There is always a shortage of trees in FRENCH, IMPERIAL, ROBE DE SARGENT, SUGAR AND STANDARD ON MYROBOLAN ROOT. These are the best selling varieties this year and there will again be a shortage. We have a fine block of trees on Myrobolan root in each of the varieties.

CHERRIES

We have a good stock on both Mahaleb and Mazzard root, and can take care of your orders in any of the following: ROYAL ANNE, EARLY BURBANK, EARLY CHAPMAN, EARLY PURPLE GUIGNE, BLACK TARTARIAN, BING, LAMBERT AND BLACK OREGON.

WALNUTS

Our scions of Franquette and San Jose Mayette are cut by the pioneer walnut expert of the State, R. Wiltz of San Jose.

OLIVES

We are offering a limited number of trees of Mission Olives worked on Picholine root.

We have a complete assortment of all varieties of citrus and deciduous fruit trees and vines. Send us a list of your wants.

Bergtholdt's Special Selection for Home Orchard **\$3.95**

Write for our list of combination offers for home planting and our free book on California Fruits. Address Box

CLINGSTONE PEACHES

OUR IMPROVED TUSCAN is preferable in every way to the common Tuscan in the following features:

- 1st—More regularly productive.
- 2nd—Perfectly round; uniform size and symmetry.
- 3rd—They do not split pit.
- 4th—They do not gum.
- 5th—They are fine grain, of superior canning quality and command a premium of from two to five dollars per ton over the ordinary Tuscan.

APRICOTS

There is usually a shortage, particularly of Apricots on Myrobolan root for planting on heavy loam or poorly drained locations. We have a fine block of Apricots on Myrobolan root in all varieties, as well as on Apricot and Peach root.

SHIPPING PLUMS

Every standard variety of Shipping Plums on Myrobolan root. Bitter Almond and Peach root. Let us have a list of your wants for prices.

PHILLIPS CLING PEACHES

Our Phillips Cling are of the true type and but one generation removed from the Phillips Cling first introduced. Very few are aware of the fact that the Phillips Cling, as commonly propagated, is deteriorating from the true type in the successive propagations.

ALMONDS

We have a fine block of trees on Bitter Almond and Peach root.

PEARS

We have a fine block of trees, well rooted and hardy, in Wilder, Lawson, Bartlett and all of the later standard fall varieties.

BARTLETT PEARS, as well as all of the standard Fall Pears, have this year made a good record for the California grower, as they do every year.

HAUSS CLING PEACHES

A seedling from Phillips Cling, and has all the desirable features of that splendid variety. Ripens immediately after the Tuscan, filling the intermission between the Tuscan and Phillips.

This is an opportunity to get 10 fine trees of choicest varieties of fruit delivered freight prepaid for only \$3.95. You can make your own selection or leave it to us and we will send ten best grade 4 1/2 ft. deciduous fruit trees including one grafted walnut.

SILVA-BERGTHOLDT CO.
NEWCASTLE CALIFORNIA



Weavers of Speech

Upon the magic looms of the Bell System, tens of millions of telephone messages are daily woven into a marvelous fabric, representing the countless activities of a busy people.

Day and night, invisible hands shift the shuttles to and fro, weaving the thoughts of men and women into a pattern which, if it could be seen as a tapestry, would tell a dramatic story of our business and social life.

In its warp and woof would mingle success and failure, triumph and tragedy, joy and sorrow, sentiment and shop-talk, heart emotions and million-dollar deals.

The weavers are the 70,000 Bell operators. Out of sight of

the subscribers, these weavers of speech sit silently at the switchboards, swiftly and skillfully interlacing the cords which guide the human voice over the country in all directions.

Whether a man wants his neighbor in town, or some one in a far-away state; whether the calls come one or ten a minute, the work of the operators is ever the same—making direct, instant communication everywhere possible.

This is Bell Service. Not only is it necessary to provide the facilities for the weaving of speech, but these facilities must be vitalized with the skill and intelligence which, in the Bell System, have made Universal Service the privilege of the millions.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

*Facts
from U.S. Gov.
Bulletin 174*

Little Stories of Success

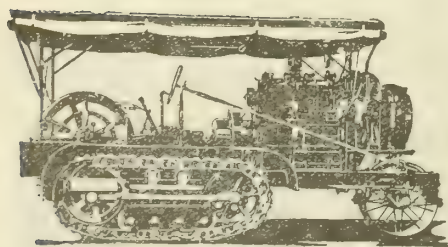
No. 11

"Bankers Opinions regarding the tractor" is the title of table No. 2 in Bulletin 174 of the U. S. Department of Agriculture. The first question asked the bankers was: "Has traction farming had a favorable or unfavorable effect upon the farming industry in your vicinity?"

In California, where three-fourths of all the tractors in the State are Caterpillars, 95% of the replies were favorable. Conservative bankers almost unanimously voted Caterpillar farming a success!

Wouldn't a Caterpillar be a good investment for you?

We have other facts and figures regarding the comparative costs of animal power and Caterpillar power for farming. A postal will bring them.



CATERPILLAR
Reg. U.S. Pat. Off.
Don't Say Caterpillar Unless You
Mean Holt!

The Holt Mfg. Co.
(Incorporated)

San Francisco Stockton Los Angeles
Both Expositions, San Francisco & San Diego

When writing advertisers, mention The Cultivator.

General Agriculture



WORN OUT LANDS

Written for the California Cultivator
By W. S. Guilford

WE hear a lot about the worn out grain lands of California where yields have been decreasing and operators of large acreages go broke.

But is it not more to be wondered at that the crop yield is as good as it is—when methods and practices are considered? There are good lands in California that grow fair crops and are not plowed but once in two or three or four years. When they are plowed the ground is barely "skimmed" four or five inches deep, and each year every straw left on the land after the grain has been threshed with the "combined", and every spear of stubble, is burned.

No humus is returned to the land from any source and the little top layer of soil that is plowed is worked over and over until it loses its open, mellow texture and becomes stiff and lifeless.

Surely there are few places in the temperate zone where nature is so kind—or unkind if the ultimate effect on a few generations of inhabitants is considered—to mankind as here.

Plow, seed, harrow, reap—this is one year's program. Then burn, harrow, reap another year and perhaps another like it. Then plow again—and so on.

The big, rich agricultural areas of the world have been successively mined by this system. Some have lasted longer than others, but sooner or later decreased yields—and the slow but sure working around of agricultural affairs—bring changes that eventually increase production.

Sometimes this comes because of the land getting a rest. After long years of injudicious cropping bankruptcy forces owner or tenant to stop putting in crops; native vegetation again fills the soil; roots and crowns and tops of plants decay; the soil grains are held apart; rain water penetrates more readily and to a greater depth; it is possible for more air and oxygen to reach more deeply into the soil; there is greater activity of bacterial life; more plant food is liberated—plant growth increases in luxuriance; and the land becomes capable of producing greater crops.

No new mineral elements of fertility have been added; food that has been locked up because of the bad mechanical conditions of the soil has been unlocked, and the land is worth more money.

A great many California soils of lowered productivity are not worn out in the sense that the principal elements of fertility are entirely exhausted. They may contain an abundance of minerals to grow maximum crops for many years, but these crops cannot be produced under the system of farming which renders these essentials unavailable to the plant.

Another thing that increases the productiveness of these abused but good California lands is a complete change in the system of farming. This has usually come with the development of irrigation, making possible

the production of crops that could be grown with little satisfaction with the ordinary rainfall.

An abundance of moisture available throughout the year makes it profitable to grow crops that fill the soil with roots, like alfalfa, and absolutely change its physical and mechanical texture. This system makes possible more live stock, more animal manures for the land and ever increasing crop making ability.

So that instead of lands called worn out being of little or no use to the community or state or nation they may be simply on the verge of some new or better system of farming that will make them more valuable than they have ever been.

LAND CREDITS

"Land Credits, a Plea for the American Farmer," by Dick T. Morgan, published by Thomas Y. Crowell Company, New York, at \$1.50 net.

This is one of the very best books we have seen on the financial question which is being so generally discussed. It is especially timely and is the book for today. It gives a review of the three bills now before congress; the commission bill, sub-committee bill and the senate bill. Criticism is made of each and the discussion enters into the subject in a most informing way. One of the strongest chapters is Chapter II, showing discrimination against farmers. From nearly 27,000 banks reports have been received showing that their total resources are about \$27,000,000,000. The capital stock of these same institutions is only slightly over \$2,000,000,000 and about the same amount is represented in surplus and undivided profits. In other words, slightly over \$4,000,000,000 investment carries \$27,000,000,000 of resources. These same banks have in loans and discounts and investments in stocks and bonds \$2,000,000,000 or, in other words, they are able to loan ten dollars for every one represented in the capital stock which the stockholders in the bank own. Of course then the credit business which these great institutions is conducting is done with the people's money, all of which is entirely proper, but to whom does this money go? As figures show, the banks have granted of this credit far more liberally to the city than to the country, or agriculture has been discriminated against. The report of the comptroller shows that our banks have loaned on lands \$542,000,000, while they have loaned on real estate, which is not farming lands, \$2,965,000,000, or five dollars have been loaned on urban property for every one on farming lands.

There is no criticism of the bankers for the practices which have prevailed but there is most earnest appeal in this book that in the future the greatest of our creative industries shall be given a fair show. Mr. Morgan, the author, is a native of Indiana, has lived much of his life in Western Kansas, and is now congressman from the eighth congressional district of Oklahoma.

We quote from Mr. Morgan's preface:

"When the sixty-third congress ad-

journed, March 4, 1915, I was confronted with a situation entirely new to me. Apparently I had nine months' vacation in sight; for, barring an extra session, congress would not meet again until December 6 following. Farm-credit legislation had been conspicuous before the sixty-third congress. The whole subject was postponed for the action of the sixty-fourth congress.

"I was disappointed in the recommendations of the commissions which went abroad to study rural credits, and I had reached the conclusion that congress should not enact into law the commission bill, the sub-committee bill, or the senate committee bill. I therefore decided I could best serve my constituents, my state, and my country by devoting the greater part of my vacation to the further study of the principles of land credit, and in preparing the result of my investigations for publication in book form."

There are 12 chapters in the book, touching upon crisis in land credit legislation, discrimination against the farmer, fundamental principles of European institutions, the three bills now before congress, adequate credit, economy, competitive land banks, interest, government aid, etc.

We believe with the author that the federal government must contribute a just share to the success which must come if agriculture is supported and encouraged as it should be. Mr. Morgan says:

"If the government shall refuse to guarantee the bonds issued by all our land banks, it can well afford to aid the farmers in building up a guaranty fund large enough to insure the safety of all our land-credit institutions. Thus the common reserve fund will unite our farmers in a common undertaking for the benefit of all; it will bind our farmers more closely to each other; and the participation by the federal government in contributions to this fund will bind our farmers more closely to the federal union, strengthen their love and appreciation therefor and enlarge their admiration for the principles of free government."

SORGHUM MOLASSES

Those of us who were born back in the maple syrup and sorghum country occasionally have a hankering out here on the shores of the Pacific for a taste of the old-time sweets. The Cultivator has referred before to the successful production of sorghum syrup in California, but for the first time we are now eating some genuine California made sorghum. It was produced by D. L. Wray & Company of Woodlake, Tulare County, and we will say that barring the "skimmings" which we used in barefoot days to get for taffy at the old Ohio sorghum mill—these to be had for the asking—we have never tasted anything finer than this Lake Brand of sorghum put up by Mr. Wray.

One of the nicest features of Mr. Wray's product is the attractive package. We presume he has larger packages but the one sent to the Cultivator office is a little "case" containing two five-pound cans of the syrup. On one side of the case is "Lake Brand Sorghum for Hot Cakes" and on the other side "Lake Brand Sorghum for Cooking." A view of Woodlake is shown on the label and "Lake Brand Sorghum, Guaranteed Pure" appears in large letters. We mention this at length for the reason that it is proof that markets may be created for many other California products if we

will look for those for which there may be developed a demand and then put them up in attractive shape. Attractiveness induces the look and taste and then quality must insure the future market.

We think the Wray Company will find large demand for their product. More, we hope it will prove, as we believe it will, exceptionally profitable.

Mr. Wray writes: "This is our second year in the business and we have just finished our season's run with an extra good crop. We are glad to say that our goods are selling very readily to merchants of this valley."

ENCYCLOPEDIA OF PRACTICAL HORTICULTURE

The "Encyclopedia of Practical Horticulture," edited by Granville Lowther and William Worthington, with the assistance of 200 specialists, published by the Encyclopedia of Horticulture Corporation, North Yakima, Washington, at \$22.00 on the monthly payment plan, or \$20.00 cash.

The four volumes which comprise this book are filled with a fund of information of value to every farmer. The book is written from the Pacific Coast standpoint. The greatest importance is apparently placed on the apple industry as the great fruit industry of the Pacific Northwest. Most of Volume I and a small part of Volume II is given over to the discussion of apples and the apple industry.

The editor says: "We have tried not to be technical. At the same time we believe we have been scientific in that we have aimed to make all of our teachings conform to the facts as scientists have discovered them. Where it was possible to do so we have expressed these facts in plain and untechnical language. Believing that thousands of fruit growers in this country, who are too busy to gather all this information for themselves, will be interested and profited by such a work, and believing that thousands who live in other parts of the United States will be interested in knowing the methods we employ for the production of fruits, proven by the prices they command to be among the best, we submit this work to the world."

The idea of the editors has been that the Coast—one of the greatest fruit districts of the world—should have its own treatise. The plan of the book is to set forth in their natural order steps and processes for propagating, maturing, harvesting and marketing commercial fruits and vegetables, with, of course, information as to selection of seeds and stocks, site, soil and climate. There is given a history of the origin of fruits and plants, with their physical and hereditary tendencies and environmental requirements. All topics are treated alphabetically, but in addition there is given a cross-index covering 24 pages, which adds materially to the value of the book.

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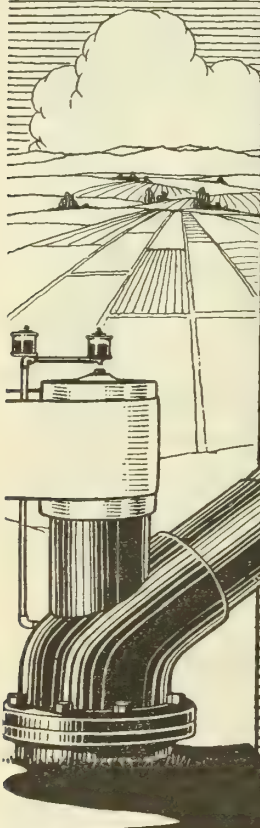
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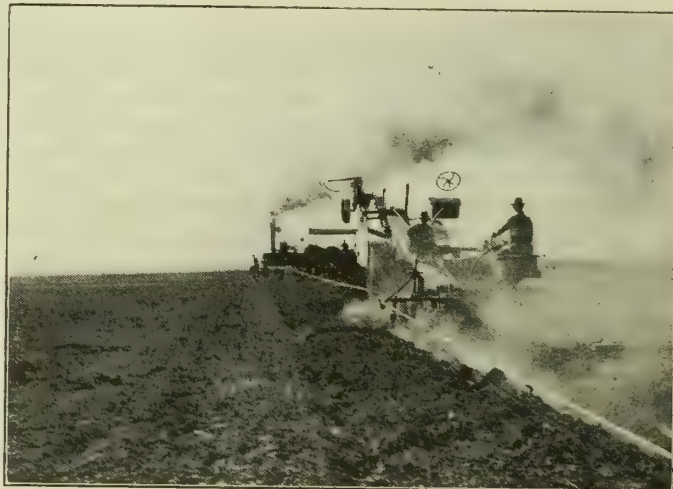
LIMA BEANS IN VENTURA

Continued from Page 555

beans being planted in rows or drills. Harvesting begins about September 15 and in about three weeks, depending on the season, threshing may commence. The threshers this year raised their price, charging 30 cents per hundred pounds. Farmers of small tracts, often unable to wait for the thresher, do their own threshing by tramping. The cost is much less, in fact just about one-half that of machine threshing, but it is so exceedingly slow that very few care to employ this method. This season has seen the trying out of a small one-farm thresher. It has proved very success-

As yet the bean matured 110 days after planting is the best the planters have been able to do.

Mr. Lewis has not been alone in his effort to grow a finer and more productive bean, for many others are joining him in the work. And all are worthy of praise and reward, for he is indeed a benefactor who makes two beans grow where only one, half as big, grew before. One of these experimenters is Mr. J. N. French of Oxnard whose experimental plots are affording many interesting lessons. Mr. French who is the Oxnard inspector of the Ventura County horticultural commission, and Mr. A. A. Brock, the commissioner, extended to the writer



Plowing Bean Lands with Cable Outfits

Two powerful engines, nearly one-half mile apart, with cable to trum, drawing five monster plows with harrows attached turning a furrow to the depth of 18 inches.

ful and will be used more generally another year.

Referring again to Mr. Lewis, who first planted limas in California, both he and Mr. McAlister have passed on to their reward, but Mr. J. F. Lewis who, as a barefoot boy aided in planting those first seed in 1868, is still growing lima beans. They are vastly superior, however, to those first beans brought from South America, not because of the introduction of new seed so much as because of wise selection for both quality and yield. For

the courtesy of a ride through some of the richer of the bean producing sections, and the Cultivator camera was offered an opportunity of taking down a few scenes of the busy season in beandom.

Both ends of the season are times of anxiety for the bean producer. He wishes to plant as early as possible to secure a long growing season, yet with cold rains which may rot the seed in the ground, he has his problems. Again, at harvesting time he anxiously watches the clouds which



Fall Plowing of Bean Lands with Tractor Power.

The tractor turns more bean land in Ventura County than any other form of power.

years Mr. J. F. Lewis has observed the behavior of these plants and their bearing capacity, also the quality and size of the product, and from the best plants he could find in the field he has preserved seed and made careful selection until the production per acre has been greatly increased.

Mr. Lewis told the story of the planting of those first beans as a small boy, and of his work with beans through all these years, as he sat on the porch of his home at Camarillo a few weeks ago. He told how he is still working to secure a 100-day bean.

may cause the loss of his entire year's work, in the meantime keeping an eye toward the hills over which at times come winds which may clear the field of all the beans piled ready for the thresher. This season has been an ideal one, nearly every bean in the county being threshed when the rains came. But at the time of our visit thousands of acres of beans were still unthreshed and from early morning till dark or later the hum of the thresher was heard. Some nights there is so much moisture that a few hours' morning sun is neces-

sary to fit the vines for threshing. Then it may be noon before the start, and an evening run, possibly up to midnight, may still make possible a full day's work, when acetylene or electric lights make most picturesque the busy scene.

The beans are sacked at the machine and later hauled to warehouses where recleaning and resacking makes them ready for market.

This season's beginning saw the association which has brought prosperity to bean growers for five years, making an endeavor to secure a greater percentage of the growers as members. Many had remained outside the cooperative organization and yet received the benefits of the cooperative effort of their neighbors. The injustice of this caused the association to issue an ultimatum that unless at least 75 per cent of the growers united the association would not market the crop. The 75 per cent did

and has outlined a plan. After referring to the general conditions of the industry and to the necessity for loyalty to the purposes of the new organization Mr. Farrand gives the following plan which will be discussed at a mass meeting of growers next Saturday at Ventura:

Plan of Organization

It does not seem practicable or desirable to the growers to form one central organization, for which reason the plan is to permit the growers in the vicinity of a centrally located warehouse to form local associations, which local associations will be affiliated together into a central organization. There will be, say, six or seven of these local associations in Ventura County.

Through the local associations is secured the personal contact with the grower, and the central association is in a position to adequately represent the general interests of all the local

associations into a central association for the purpose of cooperatively marketing and distributing the crop.

These purposes would be somewhat elaborated in drafting the actual articles. The number of directors would be sufficient to give all of the growers adequate representation, but not too large so as to be unwieldy. In the local association the growers in the articles would be authorized to vote either equally or according to a tonnage basis. A "one man one vote" plan is preferable from a purely cooperative standpoint, but frequently for local reasons it is essential to give the larger quantity of beans a proportionately larger vote in the association deliberations. Either way, however, may be successfully worked into the local association plan.

The Central Association

These local associations will affiliate themselves together for the purpose of forming a central association. This central association will likewise be incorporated under the laws of California as a cooperative, non-capital stock organization. Neither the local associations nor the central association will have a capital stock. Incorporation of the central association will be brought about by a representative from each of the local associations meeting to adopt articles of association or incorporation, which articles, like the articles of the local associations, will set forth, among other things, the name of the association, the purpose for which it is formed, its principal place of business, the number of its directors, as well as a statement as to whether or not the voting power of its members shall be equal.

Each local association is thus a member of the central association. Each local association appoints a person to represent it as its director on the board of directors of the central association, which central association thus has as many directors as there are local associations composing it.

The purposes for which this central association is formed would be carefully stated in the articles, but the following is a general though rough, outline as a basis for discussion:

To act as the agent or representative of the local associations composing its membership, and to provide for them and for the growers composing the local associations, the agencies and facilities through which the growers who are connected with the local associations may market and distribute their lima beans throughout the markets of the United States and elsewhere.

Continued on Page 583



J. F. Lewis of Camarillo.

Mr. Lewis is the oldest bean grower in Ventura County, having aided his father in the planting of the first limas received from South America. Mr. Lewis is shown in this picture sitting in his favorite chair on the porch of his home, with an outlook over thousands of acres of bean fields, many of which are under cultivation by his own family. Mr. Lewis is incapacitated from the physical work of bean growing but has remarkable knowledge of the industry, both in the matter of growing and marketing.

not come in and the association, true to its word, told the growers to look out for themselves. The "market" pricked up its ears, clipped off about an even dollar from quotations on its 1,200,000 sacks and Ventura County farmers fiddled while the "market" danced away with about a million dollars of their hard earned money.

That would have bought a lot of gasoline and things, but of course cooperation stands in the way of "independence" and prevents the producer from "selling when and to whom he pleases", also from "handling his business as well as some other man can handle it for him," etc., etc.,—in fact several et ceteras.

But the lesson of the past years is learned and at this writing better judgment is prevailing and a persistent and consistent movement is on for a new and effective Lima Bean Growers' organization.

We hope the 1916 crop of California limas will be handled cooperatively and that its returns will be such that more fine, new homes, such as those which are shown in this Cultivator, may be builded and that more pleasure trips to the wonderfully beautiful canyons and mountain lakes of Ventura County may be taken by bean growers.

PLAN OF ORGANIZATION OF BEAN GROWERS

In the matter of organization the bean growers are starting right in securing the best of legal talent. Mr. George E. Farrand, who has been for several years adviser for the Fruit Growers' Exchange, has been retained

associations. This plan, then, involves a consideration of the grower, the local association and the central association, which is now considered.

The Grower and the Local Association

As above stated, the growers within easy access of some central warehouse will associate themselves together for the purpose of forming a local association. This local association will be incorporated under the incorporation laws of California as a non-profit, non-capital stock cooperative agricultural association. Incorporation of such local association is brought about in this way: The growers in each of said localities will get together, select a committee on incorporation, which will thereupon prepare articles of incorporation, setting forth the name of the association, the purpose for which it is formed, the place where its principal business is transacted, the number of directors, which must not be less than three, and may also set forth certain other legal requisites.

The purpose of the local association could be sufficiently well stated at this time to be about as follows:

To provide the agencies and facilities through which the growers of lima beans who are members of the association will be permitted to market their crops of lima beans, the association to have for that purpose power and authority to enter into appropriate marketing and other contracts and to affiliate with other local associations organized for similar purposes, and to unite with such



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Written for California Cultivator
By Ernest Braunton



OMETIME we shall develop a California style of gardening. One recognized authority in the East, but who has never visited California,

once wrote me that he thought we should copy the Italian rather than the Atlantic seaboard style of gardening, on account of the similarity of climate. But my opinion is that we should study our own needs and comfort and if so we shall follow more closely the British, for they build for comfort above any other people. The English live in the garden and out-of-doors more than we do in California.

The Italian formalism is too harsh and cold for Californians even if we do have nearly perpetual summer. The sun shines here so much that concrete, plaster, marble and pressed brick are too glaring. Even our mission style of architecture needs some softening influence such as fragile vines. The old mission buildings are mellowed by time, but a new building of the same type is too severe and obtrusive without aid from vine and bush and tree. Personally I think white buildings and white roofs are much out of place in a land of perpetual sunshine. Let us have many arbors, pergolas, and covered seats in California; and many uncovered seats too, for there should be comfort on every hand, and close at hand. Let us have arbors large enough for dining rooms—and use them as such. We may also utilize some as sleeping rooms, a custom not uncommon in the southern end of the state. Let us have tennis, basketball, croquet, bowling and games of all kinds. Build aviaries and other quarters for pets—we do not have to keep them tenantless as is a necessity east of the Rockies for almost half of each year. Look first to comfort, then to instruction and entertainment.

Garden Now

If ever there was a time for active gardening it is now. The copious rains have so soaked the soil to a great depth that all gardening processes should at once proceed and with all possible haste be finished. One of the first autumn crops to plant lies in the bulbous class—bulbs of almost every kind—and they should go into the soil at once. Only tuberous-rooted begonias, dahlias, elephants ears and things of a tropical nature should be held out; these are best kept until March or April, when both air and soil are warm enough for heat-loving plants. All Dutch or Holland bulbs should be put into the soil at once, also dwarf gladioli. Even the first planting of the large gladioli may be made before the new year.

Harmony in Vine and Host

To those who would like to study harmony in the partnership of vine and host, plant a white-flowering wistaria on a white-flowering locust tree. Both belong to the same family and very closely resemble one another except in habit. Both have pinnate leaves and pea-shaped flowers. The

common lilac-colored wistaria grows so vigorously that it should never be placed on a living tree except the latter is of good size, but the white variety is of much weaker growth. In planting vines on trees choose the largest trees you have and use vines with foliage similar to that of the host plant.

Holding Sand Dunes

Had I a ranch "by the side of the sad and sounding sea" I would have a plantation of trees and shrubs almost down to the water's edge. When Golden Gate Park was reclaimed much of it was shifting sand dunes dominated by fierce winds blowing constantly. Furrows were deeply plowed in the sand and one of the sea grasses, or beach grass, was planted therein, all at least a foot deep. This grass was *ammophila arenaria*, also known as a *calamagrostis*. Even these were blown out by the gales and much was replanted again and again. When the whole tract had grass growing upon it, brush fences four feet high and 300 feet apart were built across the wind. In the shelter of these were planted Monterey pine, Monterey cypress, albizzia, acacia and tamarisk. As these grew stable manure and rich soil was spread all about them and eventually the dream of a park became a reality, and today is positively a wonder.

Buy Local Seeds and Plants

There is little satisfaction to be gained in controversy over seeds and plants with Eastern dealers who may only be reached by mail. It is bet-

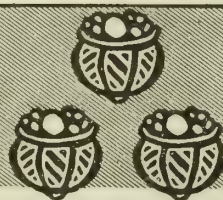
ter to purchase at home where some of the purchase price may indirectly return to your purse and where the dealer is available in case adjustments of any nature are found necessary. More than that plants and seeds grown in local territory are generally better suited to local conditions and therefore more satisfaction is assured. Then, too, local seeds should be fresher, better preserved, being handled less, and the same is true of plants. The latter are often in very poor condition on arrival from New York, Philadelphia and Eastern points of distribution. No good accrues from packing plants for transit even though confined but for a day.

Botany

Someone asks how many kinds or divisions of botany there are. Systematic botany is an enumeration of plants classified according to their various degrees of differences or resemblance, or the study of kinds of plants. The study of form and structure is structural botany, and combined with vegetable physiology is called physiological botany. The study of the distribution of plants over the earth may be termed either geographical botany or botanical geography. The study of plants of former times is fossil botany. The words botany and botanist are very carelessly used. So many persons are alluded to in the newspapers as botanists that are not in any sense. I have never known a gardener, florist, nurseryman, or park superintendent who was a botanist, and indeed I have known but very few botanists at all. I am not one myself, though often so-called because having more botanical knowledge than those in the crafts above enumerated. But some knowledge of drugs and their uses does not make a doctor of medicine any more than a house painter is an artist in oil as we know the latter.

Small Fruits

Vegetables



THE MARKETING PROBLEM

Written for California Cultivator
By Percy L. Edwards



HE Imperial Valley has completed the season's shipment of cantaloupes and it is a record breaker. The officials of the several packing houses show shipments for the season amounting in the aggregate to 4880 cars. This exceeds the output for any previous year by over 400 cars. When it is remembered that about 360 boxes are loaded in each car, the reader may form some intelligent idea of the enormous size of the crop, about 1,493,280 boxes. In the picking season it is not an unusual sight to see boxes filled with this melon standing along the side of a field a quarter of a mile in length, sometimes more.

The cooperation of the agricultural department has aided the growers the past season in distributing the big crop. An even distribution has prevented a glutting of the market and assured a fairly average price. This result could not have been obtained had it not been for the extending of market limits beyond those heretofore at hand. Indeed, the matter of marketing of crops produced is quite the most important question with which we have now to contend.

The peach growers of the San Joaquin Valley did not harvest the big crop of freestones because there was practically no market to which the grower could ship or deliver them. And yet, if one goes into a retail store where peaches are kept for sale he is asked a price which hardly varies

during the season. The grower would make a big profit if he could get 50 or 60 per cent of the price paid by the consumer. This is a peculiar condition of things. As further illustrating this condition in which the grower finds himself, the story is going the rounds of the experience of a gardener just outside of a big city in the East. Lettuce was produced for the city market in large quantities. About 50 barrels of the choicest quality of finely headed lettuce were sent in one shipment to the commission house and the returns awaited by the grower with considerable confidence. When he received a check for \$1.60 as the proceeds of his shipment he quite naturally began an investigation. The commission house made a statement of account that showed square dealing on their part, but because the lettuce could not be offered to the trade soon enough much of it spoiled on their hands. The grower went out into the markets where the consumers of vegetables are in the habit of going for such things and here he found that lettuce was in demand and selling at fairly good prices. This latter condition seems usually to be so. There is always a strong demand for fresh fruits and vegetables if the grower can get near enough to the consumer. And this is the problem that now confronts the growers of fruits and vegetables and many other farm products of California and other sections of the country. If a satisfactory scheme is devised to bring the producer and consumer into closer relations great benefit will result to both.

Economics

on the Farm

CALIFORNIA PRODUCERS' EXCHANGE

DURING the Fruit Growers' Convention is Visalia, a meeting was held by those interests in the California Producers' Exchange. This meeting was called at the suggestion of Mr. Sheridan W. Baker, vice president of the California Cured Fruit Exchange. From minutes supplied by Mr. Vernon Campbebel, manager of the California Growers' Association we take the following:

The purpose of the meeting was to consider the advisability of the organization of the central bodies of the various cooperative associations throughout the state. Mr. Baker outlined the purposes of the proposed organization, stating that such an organization should be beneficial to the various associations. He felt that the different associations throughout the state might be mutually helpful in solving the various problems that present themselves from time to time and laid especial stress upon the problem of marketing. He also suggested that such an organization should work in close harmony with the state market commission and with the horticultural commission. He felt that great good would come to the producers through the benefits to be derived from such close association with these state commissions. He reported that he had communicated with the managers of various growers organizations, many of whom were unable to be present, and had received favorable comment and much encouragement in regard to the proposed organization.

There was a general and lengthy discussion of the marketing problem and the following resolution was passed: Resolved, That the president call a meeting of the authorized representatives of the central organizations of the various cooperative associations throughout the state some time during the month of January, and that the purpose of the meeting shall be to consider the advisability of incorporating a permanent organization having for its object the mutual benefits of its members and the solution of marketing and various other problems that may present themselves to the members from time to time.

From the proposed plan of organization we note that:

"The purpose of this organization is to create a more efficient and direct system of distribution and sales than now obtains in the handling of California products, the object being to return more money to the producer by widening distribution, increasing consumption, reducing middlemen's profits and lowering the price to the consumer.

"Membership shall be composed of the central organizations representing the various producers' cooperative associations throughout the state.

"Membership fee of each association shall be \$1000. The California Producers' Exchange shall use said fee as a permanent capital fund, and one-half of one per cent of the gross receipts from the sale of goods shall be retained by the exchange to go toward

building up said fund. Said fund to be used for permanent investment in the extension of direct sales system and in assisting to finance the pack of the various member associations.

Method of Distribution

"City distribution: In all cities there are public warehouses and a warehouse shall be selected which has facilities for handling both green fruits and vegetables and non-perishable products. We find these warehouses are in line for this new movement, in fact anxious to cooperate. Their charges are very reasonable, being on a tonnage basis. They can handle our business much more cheaply than we could by owning our own warehouses. Our local offices should be maintained in these warehouses. Bonded agencies should be established for wholesale and retail distribution throughout the entire city. These agencies may be semi-jobbers or retailers located at advantageous points. Their bond deposited with the exchange should be sufficient to cover any goods that may be carried. All deliveries made to them should be on 30 days billing. Deliveries can be made to these agencies at very low rates, either by warehouse companies or trucking companies which we find make a practice of charging about five cents per 100 pounds on deliveries from one to three or four tons and seven and one-half cents per 100 pounds on less than ton deliveries, the minimum delivery charge being 25 cents. These agencies, or sub-warehouses, would be able to take deliveries of from one ton and upwards as they will be handling all classes of products. A fixed price in case lot or original packages should be made to all classes of buyers, whether retailers, bakeries, hotels, restaurants or consumers, for the purpose of encouraging the small buyer to buy larger quantities. All retailers throughout the city who send their own trucks to the central warehouse should be allowed a discount on the price made by the local agency in their district. Our plan is to allow the local sub-agents ten per cent on original package sales, which shall always be for cash; or, if not for cash, extension of credit shall be assumed by the local agent. On all retail sales made either by the agent or the retail dealers, the profit shall be whatever is decided by the exchange to be necessary. For instance in canned goods it should be between 25 and 30 per cent. A dozen cans selling at \$1.35 by the case would retail at a price not to exceed 15 cents per can. These goods retail now at from 20 cents to 25 cents. A dozen cans selling at \$1.80 would retail at not to exceed 20 cents per can. These goods are now retailed at from 35 cents to 40 cents. As the object is to reduce the price to the consumer and to increase consumption, our exchange will not object to a reduction, and a rise in price will be controlled by the retail sales price of the local agencies which will be figured exactly on a 25 to 35 per cent margin; goods being sold at a price of odd cents, possibly 14 to 19 cents per can.

"Wherever possible, carloads of

canned goods, dried fruits, citrus fruits, fresh deciduous fruits, vegetables, etc., will be shipped direct to the local warehouse agencies in these towns; but where the consumption of a given product is not sufficient to absorb a carload shipment, which condition might arise in such a product as almonds, the car would be shipped direct to the nearest city warehouse and there broken and reshipped to the warehouses in the outside territory. This would add slightly to the freight haul cost but otherwise would not entail an additional expense. Shipments to these local warehouse agencies would be carefully made up at this end so as not to overstock the smaller market on any one item. Should the local agent find that he is going to have a slight excess of stock in one line he will ship these either to the city warehouse or to one of the nearby agencies as directed from the exchange office. We find that these local warehouses are willing to handle our business on a ten per cent basis, selling to either retailer or consumer. They will bear all cost of handling and make all collections without additional expense to us. In fact, we find these warehouses in many places are already doing this sort of business in other lines.

"To inaugurate this plan we should confine our efforts to a definite territory, say the states of Iowa, Minnesota and Wisconsin.

"Practically all of the banks in the large cities throughout the country are prepared to advance money on warehouse receipts, and shipments made in any quantity to our warehouses throughout the country may be used as a basis of security for loans. This money can be advanced to the grower if desired. Our California banks are also accustomed to advance money on warehouse receipts, and if such an organization as outlined is perfected the banks will feel much more inclined to make such advances than at present. Eventually the sinking fund will produce an enormous reserve capital which can be used for this purpose."

GARLIC FROM SEED

Mr. H. M. Starr of Van Nuys comes to our office with garlic seed which a plant produced for him during the past season. The impression prevails that garlic does not reproduce itself by seed but by sets or leaves. As to the germinating power of these seeds Mr. Starr is unable to say, although he is prepared to test them out during the coming season. Perhaps this strain of seed may lead to more satisfactory and more economical production of garlic, which has been exceedingly high-priced during the last season.

STICK TO THE OLD CROPS

Although a large amount of money is spent annually for the importations of crude drugs, and the extermination of a number of valuable native drug plants is threatened, government specialists do not believe that the growing of drug plants offers any unusual opportunities for profit to the American farmer.

Drug plants are subject to the same diseases and risks as other crops and, in addition, knowledge of the best methods of cultivation and handling is less general than in the case of other and better known crops. In order to have the cultivation of drug plants financially successful in this country, the introduction of improved methods and the extensive use of machinery is probably necessary. Under these circumstances the natural tendency will be to increase the production in the interest of economy.

The demand for many drug plants, however, is so limited that if large areas are brought under cultivation there is considerable danger of over-

production. Prospective growers are urged, therefore, to acquaint themselves with market conditions before investing any considerable sum of money in this way.

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THE CULTIVATOR

"Some one has said that he who succeeds in producing a new variety of fruit is a public benefactor. He who takes this new fruit and successfully cultivates it and supplies the needs of the human family is even a greater uplifter."

The cultivation is not nearly so attractive and fails to secure for the cultivator the appellation of wizard, but it does the world vastly more good.

SHIPPING RIPE FRUIT

Some of the orange growers in the earlier districts have become restive under the slow shipment of oranges this season. Hardly an orange went to the Thanksgiving market, and a comparatively small number will go to the Christmas and New Years market, but there is one satisfaction in the larger viewpoint, and that is that such fruit as has gone is of a quality which creates a taste for more. We believe the slower shipment will be well compensated for by the greater demand of the later season. If the orange market lasted only a few weeks instead of months and years we could deceive the public with profit. As it is, however, honest oranges is the best policy.

A S OTHERS SEE US

Some most interesting reading is given in the article in the last issue and concluded in this, written by Mr. George T. Powell, an expert horticulturist who has made it his life work to give advice on horticultural subjects. Mr. Powell's experience has been almost entirely in New York or nearby states. A few months ago he made his first visit to California, and his life time training in horticulture makes his opinion of California fruit growing conditions most interesting.

Mr. Powell is the father of G. Harold Powell, formerly of the United States department of agriculture but now manager of the California Fruit Growers' Exchange, and he would naturally see much of value in this great organization, but we submit his opinion of that organization as expressed in this article as clean-cut and of value, especially in some of the points he makes as to its influence upon the fruit industry.

MORE EXPOSITION

The decision finally reached to continue the San Diego exposition another year will give opportunity to a great many to see the most beautiful exposition ever built. The management has already arranged to have many of the largest foreign exhibits at the San Francisco exposition moved to San Diego. These include the exhibits of Italy and possibly of France and many other of the most educational. It is thought the buildings now on the San Diego grounds may be sufficient to house all of the additional exhibits, but the management promises to give all the housing room which may be required. It goes without saying that some of the Zone attractions will be transferred to the Isthmus. Joining with San Diego is Los Angeles and many other Southern California towns which are lending encouragement in a most substantial way. This will bring many visitors to California during the entire year.

MORE TAXES

Now comes the president with his demand for a tax of one cent per gallon on gasoline and 50 cents per horsepower on automobile and internal explosion engines, also for a stamp tax on all bank checks and on every ton of iron and steel manufactured. The treasury is becoming empty, and the \$65,000,000 or \$70,000,000 which he proposes to raise by the above mentioned taxes will be acceptable. It is perhaps better to put these taxes upon our own people, who are able to pay them, than on the producers of lemons on the Mediterranean, of walnuts in France, and of products of other nations, but to the ordinary selfish American it does not appeal as businesslike or reasonable. Not only have lemons been given entrance to this country during the past year so as to discourage every lemon grower, but now the engine that pumps the water to irrigate the groves, also its fuel, must be taxed to give still greater advantages to the foreigner.

NO HELP WANTED

The state commission of immigration and housing has issued a statement to baggage car tourists and even to the thoroughgoing workingmen who are looking toward the Pacific Coast as a place of great labor opportunities, in effect that:

"If you are looking for work or charity you will not find the former in California and you will find the latter only through hard labor on the roads or rock piles. California is determined to apply the work test to protect itself from the influx of unemployed and unemployables."

California needs more expert help, at least at times, but to properly distribute and care for it, it must be selected with greater care than is the mass of so-called workingmen who come to this country during the cold

season of the year. California climate is as attractive to the undesirable element as to the intelligent and energetic, and the handling of this class of people has proven a problem in all of the larger towns of the state. It is to be hoped that conditions will improve so that the labor problem will settle itself within a short time.

FIVE CENT PRUNES

In May the prune growers of the Santa Clara Valley got together and decided that five cents was the right price to receive for their season's crop. But a lot of growers were willing to sell, or at least did sell, for less than that figure, and millions of pounds were shipped out at low prices. The wise grower this year is the one who held. Now the prune growers are considering the appointment of a committee to aid in steadying the prune market for 1916. The 1915 committee is to report at a meeting to be held about the middle of January. In an address signed by Chairman Bone and Secretary Shelley of this committee we note:

"It is up to the growers as a whole to determine whether for the coming year they will allow their fruit to be sold in advance by those having no interest in it and then weakly allow themselves to be bulldozed into taking any offers made them, or whether they will decide upon some reasonable minimum price and then hold firm for that price."

"Those growers who adhered to the price set by the May meeting in spite of discouragements have been fully justified in their stand and are now reaping their reward. They are getting the price they held for."

BEAN GROWERS ORGANIZING

"A generality of statement is insufficient; the grower should have a report in permanent form to take home and read over", declares George E. Farrand, attorney for the California Fruit Growers' Exchange, whose services are now secured by the bean producers to aid in the formation of a new cooperative bean marketing association. Mr. Farrand has outlined a plan of organization, part of which appears on another page of this Cultivator. With this he has issued an explanation of his plans, calling attention to the necessity for cooperative effort on the part of the growers. The bean growers have lost hundreds of thousands of dollars, possibly more than a million, by not being organized during the past season. The one season's losses would doubtless cover the expenses of a cooperative organization for dozens of years to come, but the lesson, though severe, has been of value. That necessity is the mother of cooperation is as true as it is of other things of great value which have been secured by the people of this earth. It seems impossible to inspire the human race to do what it should, or at least to live up to its best, without being driven by necessity, and once the necessity has driven us to successful effort we are prone to forget.

In his appeal Mr. Farrand says: "If the growers will contribute to such an organization both their brains and their beans, and not throw the entire burden and blame of its management upon the board of directors, it would seem that an association could be built up which would successfully handle the crops of its grower members."

Not only is necessity a potent factor in successful cooperation, but the brains to which Mr. Farrand refers. It is a trite but true saying that only intelligent growers can cooperate; cooperation calls for a large enough view of commercial transactions to permit the grower now and then to sacrifice a bit in order for the entire industry to succeed and in fact for his own permanent success. All honor to the bean growers who are making this effort for the benefit of the community and their own pocket books.

Agricultura' N tes

About two-thirds of the 1915-1916 crop of oranges, mandarins and citrons has been destroyed by a recent plague of locusts.

Appointment of Chinese commercial attaches to Great Britain, Japan, Russia, France, Germany, Belgium and the United States is being considered at Peking.

Japan has harvested an immense rice crop which has lowered the incomes of the rice farmers and has also cut down the prices on beans both in Japan and Manchuria.

Careful inquiry in Southern France shows that the outlook for next spring's olive crop in that district is very unsatisfactory. Prices of olive oil in consequence are very high.

The sugar crop of Java is again poor this year. This makes the fifth poor year in succession for cane growing. The trouble has been caused by the dry weather in the months of November and December.

There is a general movement in the Philippines to extend sugar cane planting. The local bureau of agriculture is endeavoring to acclimatize an Hawaiian variety of cane which is much superior to the native variety.

Citrus growers of Alabama, Mississippi, Louisiana and Texas met in Mobile, Alabama, the middle of November to lay plans for uniting with the California growers in their request to congress to take up the citrus canker fight.

An advertising campaign has been started by the growers of all fruits in Porto Rico, especially of citrus and pineapples. All towns of 15,000 or more population in the New England and Atlantic Coast states will be covered by this campaign.

The government of New South Wales has purchased trawlers to supply fish to purchasers at low rates. Now the municipality of Sydney has established a market with cold storage equipment where the fish may be received and kept in proper manner.

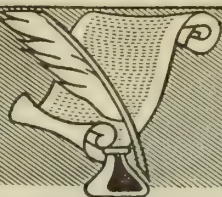
A revival in hemp growing is reported from Kentucky. This year's crop is estimated at 8,000,000 pounds, against 1,600,000 last year and 6,500,000 in 1909. Wisconsin also increased its acreage. New machinery invented for harvesting and spreading the straw has proved successful.

Kansas builds eight silos a day. Reports to the state board of agriculture reveal that in the year ended February 28, 1915, there were built in Kansas 2559 silos, or eight for every work day. There were 9695 silos in the state altogether. Every county of the 105 has one or more. Sedgwick was at the head with 372.

An ideal home exhibition was opened in October in Sydney, the capital of New South Wales, Australia. A model house costing £700 (\$3406) was built and furnished, with the idea of showing a home requiring the minimum of work by the housewife and the maximum of beauty and comfort. Many rooms were also built and fully equipped by the firms exhibiting.

That South America has resumed her normal demand for agricultural implements from the United States is shown by recent export statistics. Large consignments of iron and steel have also been shipped lately to South America, while the exports of tin plate from the United States to South America during the summer of 1915 show an enormous increase over those of last year for the corresponding period.

Agricultural News Notes



of the Pacific Coast

Northern California

Practically all the rice is in the warehouses.

Wild geese are very plentiful in the upper Sacramento Valley.

Butte County will receive in excess of a million dollars for her rice.

Canned goods from Sacramento canneries is moving to Eastern markets rapidly.

The rush of raisins to the packing houses is practically over. Many packing houses are already closed.

There will be large plantings of prunes in the district about Willows, Glenn County, the coming winter.

Glenn County farm bureau centers will hold meetings at Cotora, December 13, 14; Jacinto, 16, 17; Orland, December 20, 21.

California now has 161,350 automobiles for which the state has received this year \$1,941,774.50.

Lyman C. Byce of Petaluma has been elected president of the California branch of the American Poultry Association.

County Horticultural Commissioner Hecke of Yolo is working to make more uniform the horticultural laws of the state.

Rice growers are asking that the mud hen be stricken from the list of protected birds as it is developing a strong hankering for rice grains.

Representatives of the Peach Growers' Association have addressed growers in Tehama County urging them to join in the association movement.

The Pomona Grange of Sonoma County will meet at Sebastopol December 11 for an all day meeting. The chief topic of discussion will be rural credits.

Secretary Shear of the West Coast Potato Association is inspecting yields of potatoes grown by contestants for the \$100 prize offered by the state horticultural commission.

The Nevada County farm club has taken up the matter of holding a potato convention at Grass Valley some time in February, in order to awaken interest in potato growing.

The California Almond Growers' Exchange has greatly increased its membership during the last season. Good returns will be made to the members as a result of this season's marketing.

The state board of health has served notice on the towns of Ukiah, Cloverdale, Healdsburg and Guerneville that they must cease dumping sewage in the Russian River or its tributaries.

Armed with rifles, poisons and traps, a squad of 50 men under the direction of the state board of health is waging a war of extermination on rabbits and coyotes in Lassen and Modoc Counties.

Placerville has an extensive business in the shipment of holly, or red berries, for Thanksgiving and Christmas decorations to San Francisco. Parcel post has facilitated the delivery of these berries.

Central California

Belated tourists in Yosemite Valley have had some trouble in getting through the snowdrifts.

The Terra Bella Irrigation District has received its certificate of incorporation from the secretary of state.

One sale of dried peaches was recently made at Selma on a four and three-quarter cent basis for a 40-ton lot.

A 2500-acre tract near Merced has just been seeded to alfalfa by the Crocker-Huffman Land and Water Company.

The Modesto Farmers' Union recently held a meeting at which an address was made by Mr. Crowe of the national union.

Dairymen of Kings County are averaging \$150,000 monthly on their cream checks. There are close to 17,000 cows in Kings County.

Lindsay orange growers are planning to make one of their finest exhibits at the National Orange Show to be held in San Bernardino next spring.

The state central committee for the proposed Million Dollar Peach Growers' Association is planning to open up a campaign in the Sacramento Valley peach belt.

A half million dollar corporation has been organized to develop the old Gray Brothers' ranch between Oakdale and Knight's Ferry in Stanislaus County, to make it one of the prize dairy farms of the state.

S. J. Vincent of Porterville who shipped 100 lambs to Los Angeles realized an average of \$6.33½ each, this being the highest price Mr. Vincent has received in the 20 years that he has been in the business.

Prune growers of Santa Clara Valley who have held for five cents are gratified at the present market; many sales are being made on the five cent basis. More than 50,000,000 pounds have been held for export.

Forest rangers of the Sierra national reserve are felling Christmas trees that will be used in Fresno's municipal Christmas celebration. Work has already been started on the 5000 stockings that will be hung on the trees.

California, agriculturally and horticulturally, was awarded 503 prizes at the Panama-Pacific. Seventy-seven prizes were won by the San Joaquin Valley Counties Association. This same association also won 24 prizes in San Diego.

The annual show of the Stanislaus Poultry Association was held the first week of the month at Modesto. Several birds were exhibited that had been shown at the Panama-Pacific in San Francisco. The pigeon and rabbit classes were especially well filled.

Only 8000 tons of raisins are now in the hands of growers, according to the statement made December 1 by President Giffen of the Associated. President Giffen estimates the entire raisin crop of the state at about 120,000 tons. The Associated will handle all but 28,000 tons of this.

Southern California

The dried apricot market is beginning to show some activity.

Orange County sugar beet growers were tendered a banquet by the management of the Anaheim sugar factory.

Santa Paula reports a slow movement of beans, with seed beans apparently in greater demand than any others.

Plans are practically completed for the conveyance of the irrigation system of the Imperial Valley to the irrigation district.

The Claremont Pomological Club will hold a picnic meeting at the citrus experiment station at Riverside next Saturday.

Ventura's walnut crop has practically all been moved from the packing houses. Shipments are now being made to Los Angeles.

The Indian Hill Citrus Association is building a pre-cooling plant and the San Dimas Orange Growers' Association is about to let a contract for a \$50,000 pre-cooling plant.

The LaVerne Orange and Lemon Growers' Association is making payments to members on the final pool of Valencias. The average price is \$4.25 per cwt.

The last meeting of the Covina Valley Farmers' Club was addressed by Prof. Vaile of the citrus experiment station at Riverside on Pruning of Orange Trees.

Prof. H. S. Fawcett of the University of California has been inspecting walnut orchards in Ventura. This work is preliminary to a state wide fight against walnut blight.

The meetings of the San Diego farm bureau through December will take the nature of demonstrations. Mrs. M. V. Davenport of the state university also will give talks on home economics.

The bean growers of Ventura County will meet on December 11 at Ventura to take definite action on the plan of organization submitted at the last meeting. This plan was presented to each local district for action.

Paxton & Shattuck of Los Angeles have recently sold 2000 head of stock cattle in the Los Angeles market. Twenty-five hundred more are to come on between November 15 and the first of the year. The Shattuck ranch at Lankershim is the home of pure bred Duroc-Jersey swine.

Farm Adviser Parker of Ventura County announces the following meetings during December: Ventura Avenue, December 3; Fillmore, 6; Oxnard, 8; Camarillo, 10; Nordhoff, 13; Satcoy, 15; Moorpark, 16; Bardsdale, 20; Mound, 21; Simi-Santa Susanna, 22; Santa Paula, 24; Somis, 27.

At a conference recently held at San Francisco between directors of the Imperial Irrigation District and representatives of the Southern Pacific Railway definite agreement was reached to give to the irrigation district complete control of the irrigation system of the old California Development Company.

The Coast

Seattle potato growers are finding buyers less active than earlier in the season.

Chandler, Arizona, shipped five tons of dressed turkeys for the Thanksgiving trade.

The cattle market of North Portland, Oregon, reports a jump in price on steers to \$7.25.

The Portland Union Stockyards recently entertained a large number of stock growers from Estacado.

An order for 200,000 barrels of flour for shipment to France and England was booked last week in Portland.

Hood River, Oregon, has shipped 48 cars of pears, d'Anjous and Bartletts, being the principal portion of the crop.

Kennewick, Minden County, Washington, shipped during the last season 400 cars of strawberries, pears and asparagus.

A regular freight and passenger steamer service has been established between Beaumont, Texas, and Tampico, Mexico.

The Fifth Annual Pacific International Live Stock Exposition is now being held at the Union Stock Yards, North Portland, Oregon.

A call has been issued for the 19th annual convention of the American National Live Stock Association at El Paso, Texas, January 26-27.

During the 1915 season the cannery at Hondale, Mimbres Valley, New Mexico, made its record for one week's run with 13,000 cans.

Idaho and Utah sugar beet producers are to receive a bonus of \$35,000 because of beets running exceptionally high in sugar content.

Farmers of Douglas County, Oregon, realized over \$30,000 from turkeys sold for the Thanksgiving market. The average price received by the growers was 20 cents per pound.

From Twisp, Okanogan County, comes the report that most grain farmers in that vicinity are holding their grain for higher prices, less than 20 per cent of the crop having been marketed.

Exports of apples to Europe from Pacific Northwest ports will be very limited this year. One of the largest fruit associations reports that up to the present time it has exported only seven cars to Europe.

Washington's output of apples for 1915 is estimated by the United States commercial agent in that district at 7,092,000 boxes. The state's apple production during 1914 was more than 1,000,000 boxes more.

The Arizona agricultural experiment station is urging irrigators in that state to unite in the installation of pumping plants, making one large plant do the work of several smaller ones, with greater economy.

Oregon apple growers are immensely peeved at one little worm which happened to be in the apple which the judge in the apple class picked up at the Panama-Pacific Exposition which threw the balance in the favor of Washington.

THE LICHEE OF CHINA

By Consul General F. D. Cheshire,
Canton, China.

The lichee (*Litchi chinensis*), one of the most widely known fruits throughout China, is produced in South China, chiefly in the provinces of Fukien and Kwangtung, but also in Szechwan. A small quantity is grown in other southern provinces, but none whatever in the north. It is said that lichees grown in other than the three provinces named are inferior in quality and almost unfit for edible purposes. This report will be confined to the lichees grown in Kwangtung province.

The principal lichee producing districts in Kwangtung province are Namhoi, Pun Yu, Tsang Shing, and Tung Kun. Some lichees are grown in the Heungshan, Shuntak, and Samshui districts, and while they are produced in abundance in the Yeung Kong and Shui Tung districts they are of inferior quality.

Fruit Deteriorates Rapidly When Picked

The fruit of the lichee tree when plucked rapidly deteriorates and can be kept in its original state for only three days at most. A plan has been adopted for preserving the fruit by storing it in bamboo after sprinkling with a weak salt solution and sealing both ends of the bamboo with clay. In this manner the fruit remains fresh for about two weeks, allowing of its being exported to Shanghai and Peking and ports on the Yangtze River.

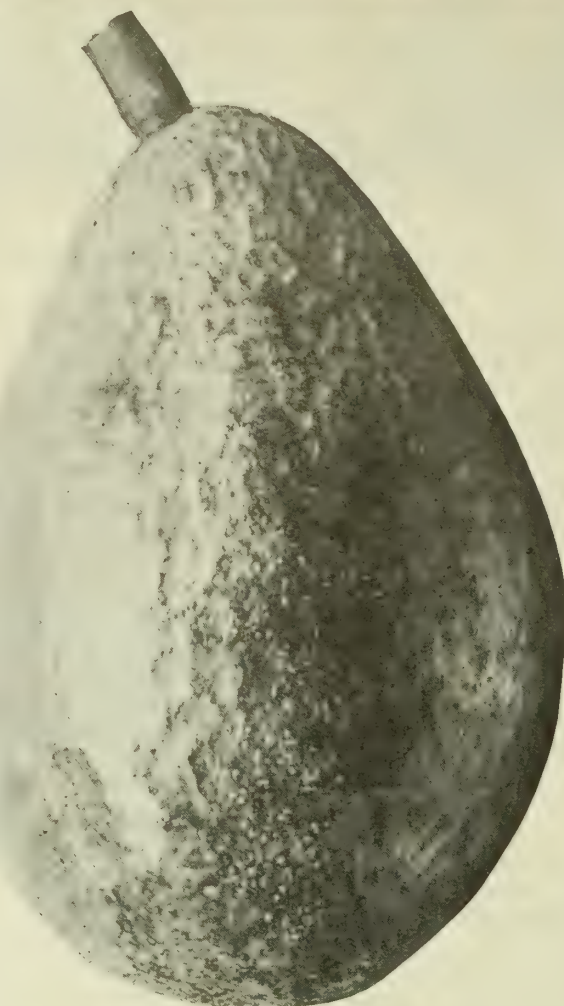
Dried lichees are very popular in foreign countries. The fruit is dried in two ways—by sun and by fire. The sun-dried lichee commands the better price, it having a finer flavor than the fire-dried fruit. There are but two or three species of the lichee that are suitable for drying purposes, viz, the "no-mai-chi," the "kwai-mi," and the "wai-chi."

The purchase of lichees by the wholesale dealers from the producers is largely one of speculation, the former bargaining with the latter for the fruit during April and May, while the trees are yet in blossom, a certain amount being agreed upon for each tree. If the tree is unfruitful the purchaser must suffer the consequences. The actual quantity of fruit produced annually is a difficult matter to ascertain accurately, but from information received from the lichee growers the total amount of lichees annually produced in the Kwangtung province is estimated at 1,500,000 pounds.

Cultural Methods

The selection of suitable soil for the planting of lichee trees is most essential. Alluvial soil lying along the banks of fresh water streams is to be preferred. A soil composed of sand and mud in about equal proportions and about six feet above water is considered ideal. The lichee tree's two deadliest enemies are salt water and cold, and for this reason it is difficult to grow lichee trees even in South China. An abundance of manure is essential if the tree would flourish. In winter the young trees must be protected from the cold by wrapping the trunks with straw and covering the base of the tree with a mixture of hay and mud, and this process must be continued until the trees have reached the age of 40 to 50 years.

The season for planting the lichee tree is in the spring. The seed or kernel from the fruit is placed in the ground and protected with manure and mud. When the tree is one year old it is transplanted to a location near a stream if possible. At the age of five years the tree comes into bearing, but the fruit is of a poor quality and gradually improves as the tree matures. Fruit of a good quality as a rule can not be expected until the tree is 30 to 40 years of age. The life



TAFT AVOCADO

Grow Avocados

(Alligator Pears)

Greater profits are being returned to the growers of Avocados than to most any other class of horticulturists. Intense interest has been created in growing this wonderful fruit, and all planters having favorable locations for its culture should not hesitate to plant their trees now.

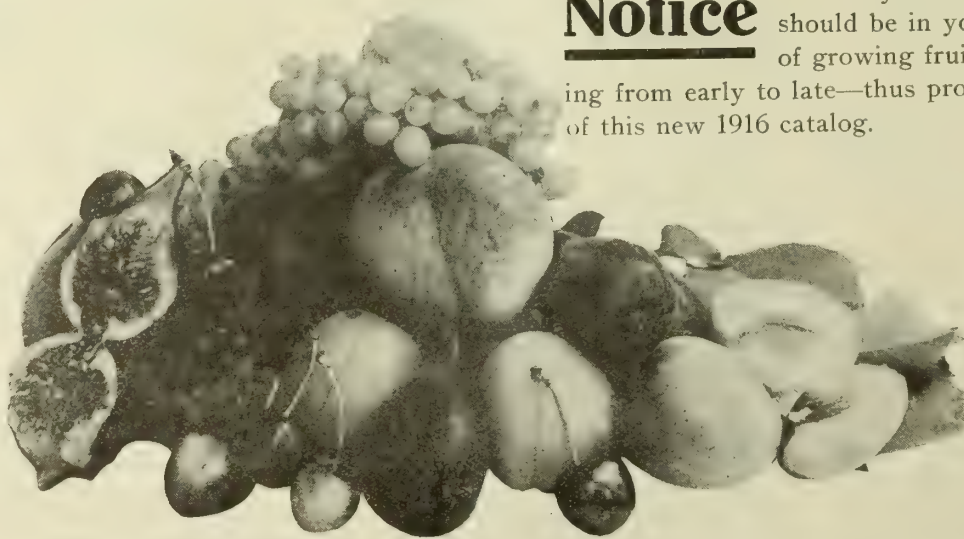
The Avocado will thrive in all locations where citrus fruits can be successfully grown and the hardier varieties will endure without serious injury, ten to fourteen degrees of frost.

Twenty-one Proven Varieties to Select From

varieties that have "stood the test"—trees that are scientifically propagated, the buds being procured under personal observation from the best fruiting trees in California. It's good advice to make "sure" of the origin of your trees, if you want best results.

Don't Pay "Fancy Prices" For Your Avocado Trees

but write for my catalog and price list, illustrating and describing the many varieties. Can supply choice trees at from \$1.50 each and up—according to size, variety and quantity wanted. Special prices on large lots.



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Plant ARMSTRONG TREES—they are the best planters, and have "stood the test."

No doubt some of my customers are of quality of my trees. ARMSTRONG TREES. Just mail me a list of your requirements. Roses, etc., and to induce you to "try out" knowing that you will become a customer of

Plant More

ALMONDS, WALNUTS

The growing of the recognized commercial nuts—has become a great industry, one of the grower "sets-the-price."

Can Supply Trees of the Best Commercial

My trees are of the highest quality obtainable considering the quality. Write me stating your requirements and return mail.

Write for

Peach, Apricot, Apple, Pear, Prune, Lemon, Pomelo, Lime, Tangerine, Kumquat, I.ouquat, and other fruit trees, stating number of trees you want. I will quote you promptly.

Notice

If you are planning to plant a Home Orchard, it should be in your home, from which to make a selection of growing fruit trees of such varieties as you desire, coming from early to late—thus providing ripe fruit from May to November of this new 1916 catalog.

John S.

Ontario

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Best Trees

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cost you but little, if any more, than ordinary
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RMSTRONG NURSERIES ever after.

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CANS, CHESTNUTS

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am prepared to make you very low prices, con-
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Prices on

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umber. Write today for a free copy

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ASCOLANO OLIVES

PLANT MORE

Olive Trees

Should you for any reason be hesitating in the matter of planting Olive Trees "forget it." The growing of Ripe Olives is bound to become the state's most profitable industry. The growers will soon be cooperating in marketing their fruit, and from the day the organization is completed you'll see Olive groves demanding greatly increased prices, and the owners will be refusing tempting offers; therefore, plant your land—such as may be adapted to Olive culture—and plant now—but make sure of getting the best trees; trees that have absolute certainty of quality; trees that will bear an abundance of fruit and bear early. My trees may not be the lowest priced but I do claim they are the cheapest in the end. All are propagated from the best fruiting trees in California.

NINETY-NINE PER CENT OF ALL MY TREES
SENT OUT AND PLANTED THE PAST SEASON ARE
GROWING AND DELIGHTING THE PLANTERS.

Write me for prices on the Manzanillo, Mission, Ascolano and Sevilliano varieties, stating number and size of trees—and variety wanted, and I will quote you lowest prices on trees of highest quality. Ask for by 1916 illustrated catalog, of Olive and other Fruit Trees—just off the press.

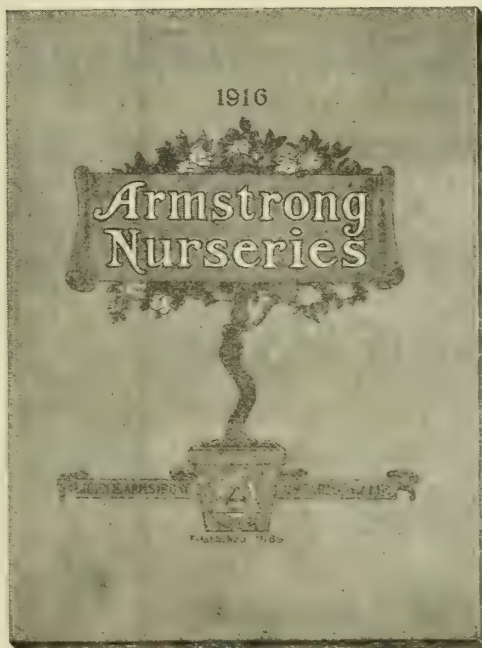
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Planter's Guide, Catalog and
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141 beautiful illustrations—
everything for the planter.
Tells what, when and how to
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The BEST Fruit Trees, shade
and ornamental Trees, Shrub-
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Write me, stating what you
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of the lichee tree is several hundred years. Grafting may be employed to good purpose if it is desired to hasten production, and for this purpose the Chinese select the "kwai" tree (Cinnamomum cassia) and the "wai" tree (Sophora japonica). Good fruit is usually obtained from trees that have been grafted after the lapse of three to five years.

Harvest Period.

In April or May the lichee tree is in blossom, and if during these months it is visited by strong winds and heavy rains in all probability it will not bear fruit. Generally speaking the lichee harvest occurs in June and July, one species after another coming to maturity. The poorest fruit marks the beginning and end of the season, the best coming in during the middle of the season.

It is said by the Chinese, and it is a very interesting fact to note, that prior to the plucking of the tree it is immune from the ravages of insects and birds. The tree is protected, the Chinese say, by a black-winged insect that spins its web in the tree and emits an unpleasant odor which effectually protects it from destructive insects and birds; but if any of the fruit is plucked the tree is deserted by the black-winged insect and is left a prey to its enemies. Accordingly the farmer who is wise will take the precaution to strip the trees of all of the fruit as quickly as possible.

SPANISH ORANGE CROP BACK- WARD

Valencia

The rains ordinarily expected in September and early October did not materialize in the Valencia orange district; hence the fruit has not developed as well as had been hoped and the proportion of large sizes will probably be lower than was anticipated a month ago. The weather has also been warmer than usual at this time of year. At this writing cool nights are looked for to impart color to oranges, but in this respect also hopes have been disappointed. On the whole the crop is somewhat backward.—Consul Claude I. Dawson, Valencia

Andalusia

The general outlook for the orange crop in Spain, especially in the region covered by the Seville consular district, has changed considerably since previous reports from that office.

The region covered by that district comprises the provinces of Seville, Cordoba, Cadiz, Badajoz, Huelva and Caceres, all of which provinces produce oranges to a certain extent, though Seville is practically the only province which exports in large quantities. The oranges produced here are usually of the sour variety, the exports going generally to England for the production of marmalade, the Seville sour oranges being especially suitable for preserving.

At the beginning of September growers reported that conditions were normal, the trees had been benefited by the heavy rains of the preceding winter and a medium crop was expected, as the trees had flowered satisfactorily. The fruit, however, does not seem to have grown satisfactorily, owing to excessive heat during the summer months and the lack of the usual autumn rains, and experts now state that it is evident that the crop this season will not nearly equal that of last year in quantity, as there is a partial failure in some districts and generally the trees are not so well loaded with fruit as last year.

The demand from the United Kingdom is large and growers are asking 2 reals (at present rate of exchange, 9.4 cents United States currency) more per hundred oranges than in June and July, 1915, which represents an additional cost of about 2.25 pesetas (42.3 cents) per half chest.

Oranges in Seville are packed in cases containing approximately 480. The crop is picked during the latter part of November and December, the first shipments being usually made the first week in the latter month.

The present year's crop will be sound in quality, so it is stated, but will probably not be more than half the quantity of the 1914-15 season. No statistics are available of the actual production.—Consul Wilbur T. Gracey, Seville.



Kinsman Beauty (and Calf) No. 139476
Owned by Dr. Roberts
Year's Record:
580.82 lbs. Butter
12,724.50 lbs. Milk

It's Up to You When Your Cows Get "Off Feed"

It's mighty important that you do something for your cows when they are in this condition. But it's just as important to care for them when they are giving a good flow of milk. A cow should be fed to her full capacity if she is to be profitable. The strain of milk production is apt to overtax the digestive organs. The heavy milker needs a tonic to act on the secreting glands that produce the gastric juices that convert the food into milk. Dr. David Roberts' COW TONIC does that very thing. It contains such roots, barks, herbs, as nature would supply if the cow roamed the meadows and woods.

Dr. David Roberts' COW TONIC

is a great conditioner at all times, especially when cows are stabled or on dry feed. Cow Tonic is not a food, but a genuine tonic to act upon the digestive organs and enable cows to get full benefit of their food.

Breeding Tonic acts on organs of reproduction and gets animals in condition for sure breeding.

Cow Cleaner removes the afterbirth naturally. Heals and leaves breeding organs in normal condition.

Calf Cholera Remedy prevents scours and calf cholera. Keeps calves in continuous growth.

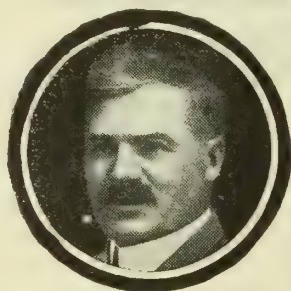
Calf Meal, Diolice, Badger Balm, Laxotonic and Stokvigor—valuable remedies, which should always be kept on hand.

Special Sample Offer STOKVIGOR, 10c

Enough to feed a cow two weeks. Aids digestion, tones the system, makes animals grow fast and develop better. Send 10c and we will send Special Sample Package to test on your own stock. Don't fail—don't wait. Enclose dime or stamps.

Get Dr. Roberts' Live Stock Prescriptions at your drug store—nearly 4000 dealers in U. S. If you do not already have the 184-page "Practical Home Veterinarian," treating all diseases of all live stock, send 25c and receive by mail, postpaid. Address

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Live Stock and Dairy



WINTER SHELTER FOR THE HOGS

Written for the California Cultivator
By W. S. Guilford

RIGHT now is the time to be doing something about winter shelter for the hogs, if this has not already been attended to.

Many people think that because our winters are very mild, particularly in Southern California and in the San Joaquin and Sacramento Valleys, that the hogs can rustle for themselves the same as the hoboes do. And it is true that hogs will live through all right and not perish with cold and exposure, as they might in the Eastern states, but they will pay handsomely for a little attention in the way of providing a dry place to sleep in and some arrangements for keeping them out of the mud during the worst of the rainy weather.

This shelter need not be expensive. A roof over the sleeping quarters that will shed rain and closed up at the sides enough to prevent drafts is enough, and some kind of a feeding floor to keep the hogs out of the mud and prevent the waste of grain will do very well.

Plenty of Kreso dip and crude oil should be used around these quarters to keep them free from lice, and the hog should be dipped or sprayed for the same reason.

Whenever it is possible these hog quarters should be located on some high, well drained place, and where no such situation is available it will pay to grade up a mound. The drainage away from the hog lot should be carefully looked after and kept open during the winter.

On some farms the hogs cease to be revenue producers at the beginning of the rainy season, and many not only do not make gains during the winter months but are actually lighter and of less value in the spring. There is no economy in such a situation, and a little planning and small expenditure now will change loss into profit.

MAKING COTTAGE CHEESE

When one does not find ready sale for all of the buttermilk and skim milk, a profitable method is to convert it into some form of soft cheese.

Cottage cheese, which is frequently called "schmiercase" and Dutch cheese, is the most popular and more extensively used than any other variety, and the demand for it is good in towns and cities. The process of making consists in separating the curd from the whey. When the whey is saved it makes a desirable material for mixing with shorts or corn meal as slop for pigs.

The first step is getting the milk properly coagulated. This can be done either by permitting the ordinary lactic germs to complete the work, or it can be helped to great advantage by the use of rennet tablets or liquid rennet in proper quantity. The skim milk should be brought to a temperature of 72 to 75 degrees and held there during coagulation.

Unless it is already partly sour it is best to add a starter of buttermilk in order to hasten clabbering, and in two hours add the rennet solution, if

it is used at all. It will require from five to eight hours for the curd to harden enough to begin separating from the whey. At this stage draw off the whey with a strainer, or scoop out the curd and place it in cotton bags for draining. The escape of the whey may be helped by pressing the bags or by using a small cheese press, jelly press or cider press.

When all the whey has drained out the curd should be well worked with the hands and salt added at the rate of one ounce to every five pounds of curd, also a little pepper to taste if desired. Some customers desire a little sweet or sour cream or soft butter mixed with the curd, and they will pay more for it in this way.

The cheese may be prepared for market in round balls or rolls or in square prints and cakes of convenient sizes, and should always be wrapped in oiled or parchment paper. Sometimes it is delivered in the small pasteboard cartons used for butter, or in a pail similar to oyster and ice cream packages. Prices range from 15 to 25 cents per pound, according to the mixture used, size of package and local demand. From 18 to 20 pounds of cheese can be obtained from 100 pounds of milk.

In the making of this by-product practice makes perfect, and there is little loss if a few batches are spoiled in trying the work. Any dairyman who is selling milk or butter regularly to private customers could carry the packages of cheese on the wagon with little extra trouble, and could get orders in advance for it, thus being enabled to make the right amount each day. There is more money to be made in making and selling cottage cheese than many people suppose.—Farmers Guide.

DRAFT HORSES NOT DOOMED

Some people seem to delight in prophesying how the motor truck and tractor are eventually going to drive the horse out of business. Here is what one city editor said recently on this subject:

"The heavy draft horse is doomed. He will not vanish suddenly, but his hour has struck. Motor trucks already are displacing him in cities. The cheap farm tractor will do the same in the country. In a few decades the great, magnificent brute will be little more than a memory. Their places will be taken by bloodless machines that never whinny greeting to a kind master, never search one's pockets for sugar—and never break their legs on icy pavements or drag out a friendless old age under the whips of stupid, greedy drivers."

This is the same old story that we have heard for the last dozen years or more, ever since the automobile first made its appearance. But there are more horses in the country now than ever and the price for good animals was never so high. In its advent the auto so far has failed to replace the horse to any appreciable extent. Fool prophecies that it would ruin the horse industry have not come true. Neither do present conditions seem to indicate that such will ever be the case. So with the tractor. The trac-

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Redwood

Pipe Tanks

We build to order, for any capacity, TANKS FROM CLEAR AIR-DRIED REDWOOD—THE WOOD EVER-LASTING.

Our tanks are built to exact measurement by the most skilled mechanics.

THEY ARE GUARANTEED ACCURATE IN EVERY PARTICULAR.

Built for All Purposes

They are cheaper than metal tanks and outlast several of them.

WE ALSO BUILD TANK TOWERS.

Remco Redwood Pipe

Is scientifically designed and perfect in manufacture. The smooth interior gives greater carrying capacity.

Design and workmanship give strength.

Redwood gives length of life.

Suitable for Irrigation, Power, Water Supply and Drainage or Sewage Disposal.

Redwood Manufacturers Company

1604 Hobart Building, San Francisco

tor will relieve the horse of much of the heavy work on the farm, but as to displacing him entirely or even to a great extent—there is absolutely nothing in it. Good horses are needed on the farm more than ever, the coming of the tractor notwithstanding. Horses are not going to be supplanted by motor machines, and anyone who thinks they are had better revise his method of reasoning. Stop trying to shove the faithful horse out of his rightful and permanent place on the farm! It cannot be done by all the city editors in the country.—Farmers Review.

GROUND VS. WHOLE GRAIN FOR LIVE STOCK

It is somewhat doubtful whether the grinding of corn for some classes of live stock is worth the labor and expense involved. Tests conducted for ten years at the Wisconsin experiment station showed an average increase in gains of about six per cent from grinding corn for hogs. The results for individual years ranged from 11 per cent loss to 18 per cent gain. The Iowa station has also done considerable work in testing various methods of preparing corn for hogs and found that while grinding showed a slight increase in the feeding value of corn for older hogs, such gains did not begin to pay the cost of shelling and grinding. Soaked shelled corn showed to much better advantage than the corn meal and also proved somewhat better than the dry ear corn.

It was a question however whether the difference in feeding value paid for the labor of shelling and soaking.

It is advisable to grind small, hard grains as kafir, milo, barley, rye or sorghum seed, as otherwise a large proportion of the feed may not be digested.

Ground oats for horses have not shown any great advantage over whole oats except in the case of horses that are at very hard work or have defective teeth. Grinding oats for hogs, however, will increase their feeding value from 20 per cent to 30 per cent, since the hog is not able to digest the whole grain to advantage.

As much as 25 per cent of whole corn may remain undigested when fed to cattle. Unless hogs follow the cattle in the feed lot it is desirable to grind the corn to prevent waste. Sheep will handle whole grain to much better advantage.—Chas. I. Bray, Colorado Agricultural College.

THE WOOLGROWER AND THE WOOL TRADE

The United States ranks as one of the principal wool producing countries of the world. The amount of wool imported by American manufacturers is equal to more than one-half of the home grown clip. American and foreign wools are often offered for sale at the same time in the warehouses of Boston and other wool marketing centers. Some American wools are equally as valuable as the best

foreign wools of the same class. On the whole, however, the appearance of American wools compares quite unfavorably with that of most of the foreign wools. The difference is due nearly altogether to the growers' methods of preparing the wool for shipment. Foreign wool growers, the Australians in particular, maintain a uniformly high standard in the handling of their wools. This care in preparation and the certainty as to the character of the contents of the bales have given their wools a high reputation that insures their bringing full value at the time of selling to the manufacturer.

Persons familiar with the buying and manufacturing of home grown and foreign wools assert that on account of poor preparation American wools net the grower from one to three cents a pound less than their actual value. This is due to the failure to classify the wool before selling and to defects from the use of improper twine, branding paints, and other minor causes.

Most American grown wool is sacked just as the fleeces come from the sheep and sold at home to dealers. Before offering wool to the manufacturer the dealer makes up from his various purchases a number of piles, each containing only fleeces of similar character and value. This work constitutes grading and should not be confused with the sorting done at the mill.

A couple of years ago the animal husbandry division of the bureau of animal industry, department of agriculture, made a canvass of a number of sheep owners in the Western states to determine the extent to which growers follow the best practices. Because of the way in which the names were secured it is probable that 383 replies received were from men whose methods are superior to those generally followed in the same localities. Practically half the correspondents "separated ewes", lambs', and bucks' wool when sacking; 59 per cent put up the black wool separately; and 53 per cent sacked the tags separately. The American wool clip is sold by the growers unclassified and in the main very poorly handled. These defects have come to constitute a fixed charge against American wool, which does not apply to wools coming to this country from Australia and some other countries.

SCENT FOR BAIT

It has been found that the use of fetid scents is very valuable in attracting coyotes to poisonous bait or to traps. Below we give the directions for making this fetid bait as recommended by the United States biological survey and many old hunters:

"Place a half pound of raw beef in a wide-mouthed bottle and let it stand in a warm place, but not in the sun, for two to six weeks, or until it is thoroughly decayed and the odor has become as offensive as possible. When decomposition has reached the proper stage add a quart of sperm oil or any liquid animal oil. Lard oil may be used, but prairie dog oil is better. Then add one ounce of pulverized asafetida and one ounce of tincture of Siberian musk or Tonquin musk. If this cannot be secured use in its place one ounce of dry, pulverized castoreum (beaver castor) or one ounce of the common musk sold as perfumery. Mix well and bottle securely until used.

"After setting the traps apply the scent with stick or straw or by pouring from the bottle to the grass, weeds or ground on the side of the trap opposite that from which the wolf would naturally approach. Never put the scent on the trap, as the first impulse of the wolf after sniffing the scent is to roll on it."—National Wool Grower.

We Won at San Francisco Reserve Champion on our Large Type Poland China Boar

in his everyday clothes. Showed Ten Head, Won Eleven Ribbons. 65 Head for Sale.

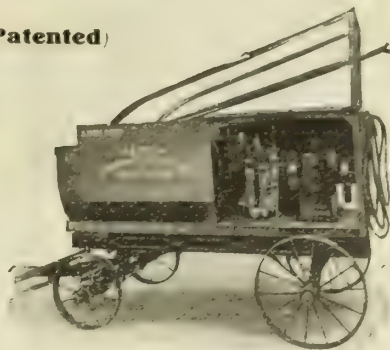
W. A. Young
Lodi, California

The Alpha Automatic Power Spray Outfit (Patented)

Fitted with 2 in. or 2½ in. Automatic Duplex or Triplex Pump
Equipped with the New Mechanical

Automatic Pressure Governor

The Automatic Pressure Governor Insures Safety, Secures Uniform Pressure and Eliminates Unnecessary Wear. No Relief or Diaphragm Valve Required. Top Guard Rails Fold Up or Can Be Quickly Removed. Gear or Belt Driven. Brass Fitted Throughout.



THE TWO ESSENTIALS in a power sprayer are a thoroughly dependable engine of ample horsepower and a positive and reliable pressure regulator that will insure uniform pressure and eliminate unnecessary wear.

THE AVERAGE SPRAY is equipped with a cheap engine and a make-shift pressure relief valve or diaphragm which is exposed to the corrosive action of the spray material which soon puts it out of commission.

THE ALPHA AUTOMATIC PRESSURE GOVERNOR with which the Alpha Spray Outfit is equipped is a simple arrangement of a combined lever and spring on each plunger connecting rod which, when the pressure reaches a predetermined limit, automatically discontinues the operation of the pump without interrupting the driving power, again permitting it to resume operation when the pressure falls below the point at which it has been set.

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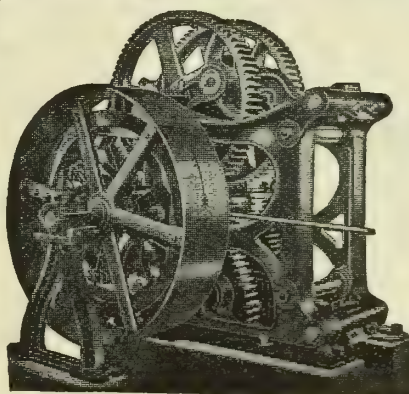
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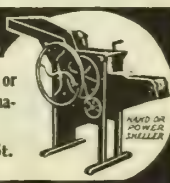
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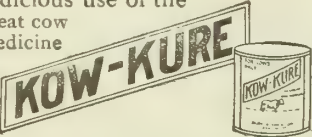
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A GREAT RECORD FOR THE DUROCS

Written for the California Cultivator
By W. S. Guilford

A year and a half ago there were no registered Duroc-Jersey hogs in Napa County. Now there are 20 herds, and a Napa County Duroc-Jersey Swine Breeders' Association is being discussed. Beside doing all of the other things possible to promote the interests of the breed and the swine business in general it is proposed to hold a public sale of Durocs.

This proposition cannot be commended too highly. Community and county breeding organizations have been the instruments for the doing of great good throughout the East and as much or more can be accomplished by them here. There are many districts in California where owners of small farms can materially add to their incomes and insure their future more surely by the breeding of registered swine than in any other way.

E. F. Curtis of Napa is the leading spirit in this Napa County Duroc-Jersey breeder's movement, and he is fully supported by the farm adviser and many others.

WOOL GROWERS

By reason of the authority invested in me as president of the National Wool Growers' Association, I hereby issue a call for that association to meet in its 53rd annual convention at Salt Lake City, Utah, January 13, 14 and 15, 1916.

At this convention there will be a full discussion of the following subjects: Sheep Breeding and Wool Growing; Sheep Feeding; Preparation and Marketing of Wool; the Remaining Public Lands; Grazing in National Forests; Destruction of Carnivorous Wild Animals; Railroad Rates and Service; Live Stock Finance; Needed Legislation, Both National and State; as well as other subjects of interest to sheepmen.

On behalf of the American sheep industry, I desire to extend a most cordial invitation to all those interested in any phase of the sheep industry to meet with us at our 53rd annual convention.—Frank J. Hagenbarth, President, National Wool Growers' Association.

HORSES SENT TO EUROPE

Produce better horses.

About half a million horses and mules have been sent to Europe because of the war, according to Professor E. A. Trowbridge of the University of Missouri. Although the number sounds large, it really includes less than two per cent of the 28,000,000 horses and mules on hand in the United States January 1, 1915, and a still lower percentage when we remember the 1915 colts must be added to this number.

The 400,000 horses bought for export for use in the war are among the lighter animals ranging from 1000 to 1500 pounds in weight. Although many of them are of mixed breeding, they are good, useful horses but do not sell for particularly high prices, and there is an opportunity for the raiser to produce others of much better type to replace those that have been sold. The increased cost of land, labor, and other things used in horse raising has gradually widened the gap between the price of good horses and mules and those of inferior animals until now only the superior animals can be produced profitably.

About 80 per cent of the horses and mules in the country are now owned and used on farms. The automobile, auto truck, and farm tractor all help to replace some of these animals, but any great changes in this direction will come about gradually and production will be governed largely by demand. In view of these constantly changing conditions, however, the business of horse production offers unusual opportunities to the man who succeeds in meeting market demands successfully. Horses of the draft or high class saddle type or mules of good size and quality and capable of doing lots of hard work are likely to prove most profitable.

THE SILO MAN SAYS

To figure the proper size of your silo, allow three tons of ensilage to all cattle over one year. This is sufficient overcapacity to take care of the calves and allow for some stock increase.

A silo will pay if one has 12 or more head of cattle. It will increase the amount of stock the farm can carry.

Location is important. Filling is at most a two or three days' job. Feeding may last half the year. Put the silo conveniently near the mangers.

An expensive barn in connection with a silo is not necessary, but a warm and well ventilated barn is essential.

Whatever the preferred make of silo, see that it is well set on its foundation, properly banded or reinforced, and if of wood, amply anchored against winds.

"The deeper the silo the better the ensilage" is a rule to remember while building. Farmers in the older sections are building as high as sixty feet. Increase of height renders doubly necessary the caution about foundations.

It will pay to use a creosote paint on the inside of a wooden silo and to wash with clear cement the inside of a concrete or brick silo.

The so-called "pit silo" can only be built where the ground is always dry to beyond the extreme depth of the silo—in other words it will not work where you can strike water while digging.

Carbonic acid gas is formed by new ensilage. In the pit silo or in others with airtight walls above the ensilage this gas collects and may kill the man who enters. Lower a lantern; if it goes out or burns dimly it is unsafe to enter.

Packing properly is the great thing in ensilage making. Tramp the edges. Imagine you are making a jar of sauerkraut.

The closer corn is to being ready for the shock the better it is for ensilage. Don't waste time snapping the ears. Feed the whole-corn ensilage, and let the hogs gather the waste by running behind the cattle.

Ensilage is not a balanced feed. It needs clover or alfalfa hay and ground feed in addition.

For a cow giving 30 pounds of milk per day ten or 12 pounds of alfalfa hay, eight to 12 pounds of concentrates (bran, shorts, ground feed, mixed) and 30 to 40 pounds of ensilage forms a good ration.

Ensilage fed in excess, to the exclusion of other feeds, especially if made out of unripe corn, does not give good results. The ensilage is not to blame. Blame the feeder.

Cowpeas, oats, sorghum or other crops of like general nature make good ensilage, bearing the same general feeding value to corn ensilage that the crop so used bears to the corn crop.

The silo creates pasture conditions throughout the year. Rightly managed, it will pay for itself in two seasons.

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Poultry for Profit

THE BEST POULTRY HOUSE

Written for California Cultivator

By Jean A. Koethen



BUILDING poultry houses in California is like fixing over a lady's gown. You use the materials you have, only taking care to see that the finished product is large enough. If accessories and material do not match, never mind; pretend they were not intended to match.

Many of the problems of the Eastern poultry keeper are unknown to us. We have neither snow nor blizzards nor frozen combs to worry over. Hence the directions for building given by Eastern experts pass us by as lightly as a summer breeze. That we have problems of our own has not occurred to some of us. One of these problems is the rather rapid deterioration of poultry in warm climates. They miss the bracing effect of real winter, just as we do, and must have their idiosyncracies more carefully considered in some ways than those husky fowls that are buried under snow half the year (or less) at the Maine station. I doubt if roup is any more prevalent in Maine than in California, and chickenpox certainly is not. The farther south you go, so authorities say, the worse nuisance this troublesome disease becomes.

But what has all this to do with housing? Just this, that the poultry house must be planned to remedy as far as possible the faults of climate. Where fowls can comfortably (and with great advantage) roost out of doors almost the year round, indoor conditions must conform to the ideal outdoor conditions. These are, plenty of room, unlimited fresh air and freedom from insect pests.

Now unlimited fresh air means cleanliness, for there is no fresh air where droppings are allowed to accumulate week after week. Freedom from insect pests also means cleanliness, absolute cleanliness. I think we must put first, as one of the requisites of a California poultry house, perfect ventilation. Second we may put a simple construction which admits of easy and thorough cleaning. Third we will put protection, for our winter rains are penetrating, and no hen likes to go about with damp, dragged feathers or to be obliged to scratch in the mud or not scratch at all. Fourth we will put adequate size, for there can be neither fresh air nor cleanliness where birds are crowded together in quarters too small for them.

Types of Houses

There seem to be three types of poultry houses in general use in this state: The simple, open front shed without any provision for scratching room; the open front roosting house with scratching shed under the same roof, and the double decker, a modified Eastern type, in which the building is high enough to admit of scratching room under the floor. I saw several houses of this last type in a poultry colony near the coast where fogs and chill winds prevail, and it seems well adapted for such a location, though a bit expensive for most

places. The floor of the laying house was perhaps five feet from the ground and reached by a stairway at one end of the building. Twenty-four roosting apartments, each designed to hold 50 hens, were connected by an open alley at the front so that each hen had the length of the building for her playground, though she was expected to go home to roost. Dropping boards kept the night droppings out of the deep litter which covered the entire floor, and nests were underneath the dropping boards. The entire front of the building was open and looked toward the south, but curtains were provided for rainy weather. A small stairway in front of each apartment led down to the ground below, and we were told that the hens quickly learned to go up and down these.

I never saw more comfortable looking hens than the Leghorns in this cozy laying house, and could easily believe the statement of the caretaker that his hens laid in winter when nobody else's did.

The roosting-house-scratching-shed type, in which all is under one roof, with the ground for a floor, is seen in California with many modifications, and is probably the best house for our climate. One prominent Leghorn breeder uses for her layers a house capable of accommodating 50 hens, open front, of course, and with some sort of window at the rear to give a draft in summer. A small door, just big enough for a hen, connects this roosting house with the scratching shed, on one side of which are the nests. Another uses a similar roosting house, but smaller and with cement floor, while the connecting scratching shed has dirt floor. These two houses have the alley along the front. Another carefully planned house has the alley in the middle with a row of roosting rooms on each side and feed troughs along the alley where they can be easily reached. Another has the open front laying house, with space for scratching under the roosts. This necessitates a board floor, and is therefore more expensive.

Many commercial egg ranchers seem to manage very well with the colony house holding from 30 to 50 hens. Some of these houses may have scratching space under the roosts but many I am sure do not. In rainy weather the hens are forced to crowd upon the roosts, or perhaps under them, and manage as best they can till the storm has passed. These houses are no cheaper than the long laying house, but they give opportunity for distributing the birds over more ground, which is in some ways a great advantage.

The Cheapest House

The cheapest house is a square house; the cheapest roof a shed roof; the cheapest floor a dirt floor. How much is to be gained in our climate by a cement floor I do not know. They are more easily cleaned, no doubt, but so few are seen that one is forced to conclude most poultrymen do not consider them worth while. The character of the soil determines to a large extent the floor required. In our locality the decomposed granite soil packs in many places till it is nearly as hard

as cement. No need of cement floors with such soil, nor of dropping boards, unless they are needed for giving more room underneath. The same is true generally of adobe. It is even more floor like than granite. I should like to try treating such a floor with road oil as is now and then recommended.

In planning a house the number of hens it is to contain must be carefully considered. Four square feet of floor space for each hen of the heavy breeds, or three to three and a half for Leghorns, is necessary to secure abundant roosting room and air space. A house 14 feet square, which is a very good size for a farm flock, will therefore accommodate 50 heavy hens or 65 Leghorns. A house eight by ten, which is a very good size for a colony house, holds 25 heavy hens, a large enough flock for the backyard poultry keeper. Either of these houses, built with shed roof, fronting south, with all or nearly all the front to the sun, and with dropping boards, so that the entire floor may be covered with straw for rainy weather scratching, makes a very satisfactory building for the small flock. A building of this sort should be so high that the attendant can enter it without stooping, say seven feet in front and five and one-half feet at the rear, and should have a window or windows sufficient to insure absolutely fresh air in summer. A building open on two sides is excellent for summer, and this can easily be managed when several laying houses are built together with scratching shed between. When a single building is used, like the 14-foot building mentioned above, it would be a good plan to make one side all windows or open and so arranged that curtains can be drawn in winter.

South Front Best

The best front for a poultry house is south, but something depends upon the location. Prevailing winds must always be considered. In general the winds from which our hens must be protected come from the north or northwest, and a south or east front is always a necessity. On the other hand our winter rains come from south and east and there must be some protection from them. A portable house, which can be turned with its back to the wind, in whatever direction that may be, is very convenient but affords no scratching shed accommodations. As a rule if the roosts are placed at the rear of the house and some provision made for curtains which can be closed during rains, there will be little trouble. A door hinged at the top so that it makes a protection from the sun when it is raised and from the rain when it is lowered, is as good as anything for this purpose. When this cannot be had the inevitable burlap sack makes a fair substitute.

A recent Cornell bulletin argues that if 50 hens is a good number for



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one house, 100 is better, since labor and housing will both cost less. On the other hand the number of hens in one house should not be above 500 or disease will find too easy entrance. Few California poultrymen keep more than 50 hens in one roosting house though many use the long laying house. It is a question whether it would be wise in our climate to keep a larger number than this, but that is one of the things we have to find out.

The Colony House

When only a small number of birds are to be kept in a house, as is the case on most breeding plants, the small colony house is generally used. On one of the most up-to-date plants in Southern California the male birds are kept in colony coops capable of holding from four to twenty birds apiece. These coops are of light lumber covered with tarred paper, with the penthouse door for shade. These coops can be readily tipped over and every inch painted with disinfectants. The breeding pens are housed in larger colony houses, probably six or eight feet square, with the space under the roosts carefully fenced in from the rest of the floor so that there is abundant scratching space.

The portable colony houses, small and light enough to be carried from place to place, are a great convenience, and when made of tarred paper cost but little. Tarred paper is not very durable and must have a substantial foundation of wood to keep it firm, but it makes a light house and is itself insect proof. Between it and the boards to which it is nailed, however, is the choicest harbor possible for mites and one harder to reach with insecticides than the cracks in wooden buildings. In some districts where ticks and fleas

are troublesome these colony houses are made of galvanized iron which is absolutely insect proof.

HENS FOR EGGS

Written for California Cultivator
By J. R. Henderson, Phoenix

The other day, September 25, I was told that a man near me was getting three cases of eggs a week from 400 birds. Such an output being somewhat unusual in this (Salt River) valley at this time of the year, I went to see him. I found that the report was quite true and that the hens were not only in fine shape but were giving an excellent account of themselves as well. Their owner himself is a long, long way from chicken age and has had plenty of chances of seeing men try all sorts of ways of making and losing a living, and he has a firm belief in poultry for putting money in his purse. He told me that he found his hens gave a better return for outlay, and at less risk, than cows or hogs. He showed me that he got two dollars out of his birds with which to pay each dollar he had to put into them, and that the net profit on his 400 head at the present time was a quiet \$15 a week.

Of course some people will smile at the idea of a paltry sum like this and will talk (in advertisements) of the wonderful results which you will get (on paper) if only you will buy their stock or their eggs or their food or whatever else it may be. Maybe you will, if only you don't get tired of trying, and have any money left to go on trying with, but I know a few quite honest men and hard workers, and not fools either, who would be very glad to be doing as well as the subject of this true story.

Now as to the birds that were earning their keep and a little over to pay taxes with, I found them to be a very comfortable looking lot of crossbred ladies, of an average weight of five and one-half to six pounds. The foundation stock was Brown Leghorn, and the crosses used had apparently been Barred Rock and White Wyandotte. Most of the flock was confined in a run of about 250 feet by 50 feet. The rest seemed to be at liberty. The birds looked good to me, that is to say, that though they were crossbreds they were clearly bred from really good stock on both sides. There was nothing of the scrub about them anywhere, and no one who knew anything about stock would call them mongrels either. They were a set of fine, business-like hens, who had no reason to be ashamed of themselves or their parents. They looked as if they knew perfectly well that they were in the world simply for the egg and meat proposition and didn't mean to be beat by any hens living.

As for their housing, it was practically a water tight roof and nothing more, good enough for the birds, but very scant accommodation for a louse looking for a night's lodging for his family. The feeding was decidedly interesting. The owner of these fortunate hens had found a means of getting a steady supply of—what do you think?—old cheeses that were no longer fit for market. I must confess to being fond of an old, ripe cheese myself and I could not see anything wrong with the sample one produced for my inspection. However they were to be bought for a cent a pound and that did not seem much. The second item in the morning feed list was buttermilk, which was put into a big pan and boiled. Into the boiling milk was put a good lump of cheese, which soon

melted. Rolled barley and bran formed the body of the feed and all that I can say is that a piece of the cake thus made smelt so good that it is no wonder the hens thrive on it. What the other meals consisted of I don't remember, and I hardly think it much matters what they were; it was the morning dish that made those hens without rivals in the laying line.

And yet, was it that alone, would you say? I am not sure that I would like to say that either. You see they were a lot of really fine crossbred birds, that is to say they were bred from good specimens of different varieties, in each case possessing fine laying qualities. Surely the combined effect of the good qualities shared in common by two vigorous specimens of distinct varieties should give the best of results. And as a matter of fact they do give the best of results, so long as you don't want to sell stock or eggs for setting. But the mating needs to be carefully done, as carefully as if you were mating for prize winners, in a way. Any old stock of different breeds won't do; you want the best you can find, and then you may look to get something from your mating that will please you and put some solid money in your pocket. And if youthful chicken people who have yet to learn how quickly some hens (like some other two-footed creatures) can make dollars fly, turn up their noses at the sight of your yards, it won't hurt you, so long as your bank book has a pleasant tale to tell.

I do not for a moment wish to suggest that some of the pure breeds can not give a most excellent account of themselves. Of course they can and do. The trouble is that their utility qualities suffer so much at the hands of those who exploit them for show purposes, and regard them as of value from the point of view of the fancy only. How many fine utility breeds have been and are being spoiled through the requirements of the show pen? What about that wonderful table fowl and fast grower, the Faverolles? Are feathered, or not feathered legs, five or four toes, or ten-toe questions to be allowed to spoil that breed for the meat market? How long is the Sussex going to be a king of table poultry if a few white tips here and there are to constitute the value of one of the most popular members of the family? I am as keen a show man as any one, but I know that I can not eat my cake and have it. If I wish to insist on getting certain merely fanciful points I know that I am also certain to risk the loss of some practical ones. Why not for the sake of a long suffering public establish and recognize a first class table breed and forbid it to be judged, under severe penalties, except for strictly utility points? A few very highly skilled poultrymen may try their honest best to combine the demands of the club standard with those of the dinner table and perhaps have some small success, but what of the thousands who keep poultry simply to make money by winning prizes and by selling stock and eggs? I do not blame them. All I say is that their system of mating is guided solely by the requirements of the show standard, and the probable end of such mating is the death of their pet breed from the utility point of view.

Give the chickens plenty of fresh water. Sixty per cent of the hen's body and 60 per cent of the egg is water.

MISCELLANEOUS

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.
Frost Protection for 10 acres—500 Hyslop Orchard Heaters; 11 gal. capacity, at bargain. I. Ford, 915 W. Cypress Ave., Redlands, Cal.
Dried Figs—Calimyrna seven cents; black 5 cents per lb. for 25 lbs. or more. Tribune Nurseries, Elk Grove, Cal.

CLASSES OF CHICKENS

What breed of chickens to use on the farm, is an ever recurring question. So far as those qualities that are important on the farm are concerned, the principal distinctions are between classes rather than breeds.

The Mediterranean breeds are small, sprightly, very nervous in disposition, are good rustlers, can fly over any fence that is likely to be constructed, are clean legged, and are good layers of pure white eggs of fair size. The Mediterranean class includes Leghorns, Anconas, Andalusians, Spanish and Minorcas. Of these the Leghorns are the most popular among the breeds, and the single comb whites are the most popular of the Leghorns.

In the Asiatic class are found birds of the opposite extreme in almost every characteristic. They are the largest of the chickens, are slow maturing, and are very heavily and loosely feathered over the body and down the legs. They are rather poor layers of dark brown eggs of good size. The breeds that comprise the Asiatic class are the Brahmas, the Cochins, and the Langshans.

About half way between the Mediterranean and Asiatic breeds in most characteristics are the American and the English breeds. They are fair layers of light brown eggs, and while not so difficult to control as the Leghorns, are very much more active than the Asiatics and usually are more desirable for the general farm. Good strains of the American breeds lay nearly as well as the Mediterraneans, and at the same time furnish a better carcass for the home table.

The American breeds which are common on farms are the Plymouth Rocks, the Rhode Island Reds and the Wyandottes. The American breeds which are seldom seen any more are the Buckeyes, the Javas and the Dominiques. The only English breed that has had any large degree of popularity in this country is the Orpington.

The real choice to be made in the way of a breed for the farm, usually lies between one of the American breeds or the Orpingtons on the one hand, and a Mediterranean breed on the other. As a general thing the Leghorns will probably lay more eggs the year round than the American breeds. The question to be decided is whether this fact offsets the difficulty of their control and the fact that their carcasses are not generally considered so desirable.

Within the American class the choice is largely one of personal taste. The fact that the carcasses with light pin feathers are being demanded more and more by the best markets, however, is having more and more influence in favor of the white and buff varieties. On the other hand it is generally understood that where coyotes are still about the white varieties are more conspicuous and more easily picked up.

In the preparation of eggs for market the greatest step in advance that can be made is in educating the farmer as to the importance of keeping the male birds away from the laying flock during the summer months, so that infertile eggs may be produced. —Kansas Agricultural College.

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One Hundred Acres \$75 Per Acre Rice Land, Best in State for Sale—In a locality where rice is being grown now profitably. This soil is suitable for grain and alfalfa; in a section of Kings County which stands preeminent in farming circles for large crops. Write for particulars or call. Large or small tracts on easy terms. Hanford Real Estate Co., Hanford, Cal.

Adjoining the town of Concord and our farm are small tracts, just the thing for poultry, fruit and berries, which can be sold on rental terms, and we will assist buyers in many ways to get started in the poultry business. VALLEY POULTRY FARMS, Box 188, CONCORD, CAL.

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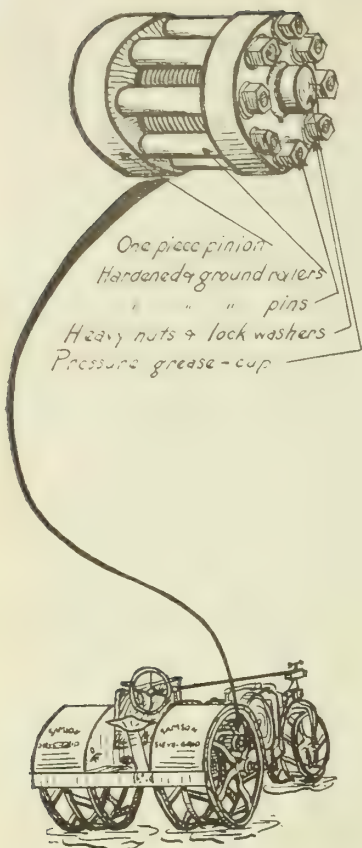
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INCORPORATED

Stockton, California.



Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

HELP WANTED

"By the farmer and for the farmer" is one of the Cultivator's mottoes. In this department more than in any other we want it made true. There are hundreds of questions which come to the office asking for information and we do our best to get just what the inquirers wish. Very often questions come to us which can only be answered by the man actually in the field work who has had experience along the particular line in question. Now will our subscribers help us in this department. We want help, and subscribers from all parts of the state are coming to us each week for just such information as we know some of our readers have. For the best answer received during the two weeks from date of this paper a six-months' extension of time will be allowed on the subscription.

Here is this week's problem. Send us your answers:

Best Grasses for Pasture

I have about 100 acres of hill pasture land that has a poor quality of grass on it and lots of weeds. I have burned off all the open spaces where I can get to them and have broadcasted burr clover, perennial rye grass and Turkestan alfalfa. On account of the patches of brush I did not harrow at all but depend on the rain to beat it in. I sowed before any rain fell. Will this method be successful? Can you make any suggestion to get rid of the undesirable grass and improve the good grass? I want to raise calves and would like to know how much I can pay for hay to feed. My pasture will carry stock from February to June as it is now. If I can get a better grass started I should have feed longer. This would mean I would have to feed some hay in July, August and September, and all hay in October, November, December and January. I have about 30 acres of hay land and ten acres of young orchard where I can raise corn between the trees. How much hay will it take to feed a calf through the winter (four months) and what is the highest price I can afford to pay for hay to raise beef stock? My main crop is fruit, but I want to get my pasture land to working. What can you suggest?—Subscriber, Paso Robles.

We believe that if our Paso Robles subscriber could disc or harrow in this seed he would secure far better results, but if that is impossible we would suggest he seed very heavily to make up for waste.

* * *

We are always glad for comment or help from the subscribers but the special contest this week is only on the above query. Next week may bring another.

Onion Sets

In putting in onion sets is the result the same if I put them in some right side up and some wrong? It makes considerable difference in labor but will the big onions be perfect? If large sets are put out and they start to go to seed will good, large onions be produced if the seed stem is pinched off when small? What variety of onion is used the most for producing the small yellow or brown sets in California? Also, what time should seed be planted in this locality for sets?—Subscriber, Tulare.

Onion sets should be planted with the root end down if you expect to make large onions. If they are to be used only for green onions it is immaterial as to whether they are set upright or not. If the sets are thrown in hit or miss they make ill-formed, small-sized bulbs when grown. A set larger than one inch in diameter is not good for growing large onions as it is too far developed to regrow into

a perfect onion as it is very likely to run to seed and as soon as it has started the seed stock it is worthless as a good, large onion even if the seed stalk is pinched off. Yellow Globe Danvers and Australian Brown are the varieties used for sets in California. The seed is sown early in April at the rate of 75 to 80 pounds to the acre.

Horse Beans

Can you give me absolute information as to planting horse beans; when they should be planted, what kind of soil is adapted to them; how far apart to plant; how deep to plant, and what is the best variety that will find the most ready market?—Subscriber, Gilroy.

Horse beans are hardy and will do well on any good tillable soil. Plant in drills three to four feet apart. The Broad Windsor is the best variety for California conditions.—D. F. R.

Garlic and Lentils

Would like to ask a question in regard to garlic planting. I live in a mountain valley 70 miles north of Los Angeles, elevation 4000 feet, annual rainfall 30 inches, mostly in winter; considerable snow, ground freezes from one-half to one inch deep occasionally at night, but thaws every day, summer climate ranges from 55 degrees to 65 degrees at night to 80 degrees to 100 degrees days. Ground is nice and warm by May 10 to 15 and no frost until November 15 to 20, soil sandy loam, both heavy and light. Do you think I can raise garlic by intensive dry farming and when would you advise planting?

Could I raise lentils profitably?—Subscriber, Neenach.

Garlic can be grown in your soil and climatic conditions by putting out your sets in April in ground that has been plowed and cultivated thoroughly to conserve the winter moisture. They should grow well from that time on and give you a mature crop by the latter part of September.

Lentils have not been a profitable crop in Southern California. We would advise you, however, to plant a few and try them out, planting them as soon as any danger of frost is over in the spring.—D. F. R.

Planting Date Seed

Please tell me how to start date palms from the seed?—Subscriber, Seeley.

From "Date Growing" by Paul B. Popenoe, we quote: "The soil used for the purpose must not contain enough alkali to injure ordinary crops, and it will be best if it is nearly pure. California growers should select a clean, sandy loam, such as is available in many parts of the desert. Several methods of starting the seed have been found successful, and the one to be selected will depend on the grower's own desire. Flats or shallow boxes offer a convenient method of beginning and are particularly desirable if the grower has been a little slow in getting his permanent location ready. They may be transported easily from place to place and save a great deal of time, labor, and water in handling the seeds during the first part of their plant life. The seeds should be planted an inch or two deep and three or four inches apart, and the soil kept constantly moist."

Potato Worms

How may potato worms be de-

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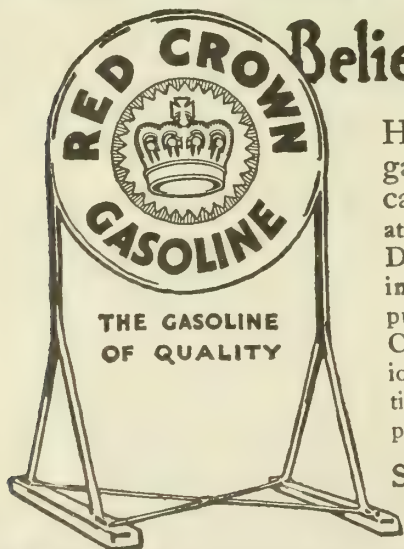
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stroyed in seed potatoes?—Subscriber, Moorpark.

The potato worm is killed by soaking the tuber in water for 36 hours. In storage bins expose in a pan one and one-half to two pounds of carbon bisulphide to every 1000 cubic feet of air space. Do not permit any light or a lighted pipe in the room while there is any odor of the material remaining as it is very explosive.—J. W. M.

Pollenizing Bartlett Pears

Is it necessary to plant other varieties with Bartlett pears in order to pollinize the flowers and secure good crops? Have purchased 1000 Bartletts with 800 other varieties to plant in same orchard but am told that if there are plenty of honey bees near the orchard this is not necessary. I am isolated from other orchards, have good, deep, rich loam soil, northern slope, eight and a half per cent average slope, irrigation water 200 feet lift. Is it wise to plant under these conditions in Southern California?—Subscriber, Moorpark.

It is not necessary to interplant Bartlett pear trees with other varieties to secure good crops.

You do not state your elevation. If you have to do much pumping and lift the water 200 feet, citrus fruits would perhaps be more profitable, provided the temperature is suitable. Bartlett pears would no doubt be very profitable under your conditions provided you successfully combat the blight.—J. W. M.

Meat, Fresh or Dried?

Which is best for chickens and ducks, fresh raw meat, dried or cooked. I feed them rabbit meat.—Subscriber, Milford, Utah.

If no more meat is fed than the birds will eat immediately, it does not matter whether it is cooked or raw, but raw meat which is left on the ground to decay is poison. It would be well to cook the meat a part of the time for the sake of variety, and for young chicks it is safer. The only object to be gained by drying meat is to preserve it.—J. A. K.

Dead in the Shell

Out of 30 eggs set last October I only got eight hardy chickens. There were only a few infertile eggs, the rest showed fully developed chicks but dead in the shell. I sprinkled the eggs with lukewarm water just before hatching.—Subscriber, Milford, Utah.

If the climate in your part of Utah is as dry as most of California is in October, this fact alone may explain your poor hatches. A single sprinkling at the close of incubation does not supply sufficient moisture to keep the inner membrane of the egg from becoming tough and dry. It is a good plan in such weather to keep the dirt under the eggs moist by pouring water down into it occasionally. Lack of moisture, however, is not the only reason for the death of chicks in the shell. Possibly the breeding stock was weak or immature. When the eggs used for hatching are laid by pullets a great many chicks are lost in this way. Possibly the nest was carelessly constructed so that the hen could not keep all the eggs under her wings at once. Perhaps the hens were disturbed by mites or lice or for some other reason left the nest too often or stayed off too long. These premature deaths are one of the most perplexing problems in poultry culture.—J. A. K.

Feeding Chickens on Range

What more is needed in the way of food for chickens for egg production when they range on green alfalfa and barley stack? Feed kafir twice a day.—Subscriber, Holtville.

Alfalfa, barley and kafir do not con-

stitute a balanced ration. Your hens need meat in some form. The bugs they pick up partly supply this need, but unless they are unusually numerous are not sufficient. I should give them a hopper of dry mash to which they can help themselves at will or else give a liberal feed of wet mash once a day. A good mash formula for hens on such range would be: bran, two parts (by measure); middlings, ground oats, corn meal and beef scrap, one part each; ground bone, one-half part. With the mash always before them or given moist in the morning they will need kafir only for the evening meal.—J. A. K.

Oil Coating for Reservoir

Can a reservoir 150 feet square and five to seven feet deep, for holding water for irrigation purposes, constructed in coarse, sandy soil, be coated with oil so that it will hold water and how much oil will it take for a square yard? How should it be applied? — Subscriber, Warner's Springs.

In such soil we believe it would be a mistake to try to hold the water with a coating of oil. We will be glad to hear from subscribers who have tried such an experiment. If used we believe a very heavy oil should be secured, say with 75 or more per cent of asphalt. This should be applied hot and thoroughly worked into the gravel.

Almonds in San Fernando

Will it be profitable to plant almond trees in the San Fernando Valley and which is the better variety? Also, how much work is it to harvest them? Can I smudge to keep off frost?—Subscriber, Zelzah.

The San Fernando Valley is a large one. There are portions of it in which almonds have done well. The best answer to your question can only be secured from those who have made plantings near you. We hardly think frost, which is one of the greatest enemies of the almond, can be economically controlled by the use of smudge pots. The almond requires a cool winter season with a warm spring and no frost after blooming time. An early fall with a warm January and a frosty February means loss of the entire almond crop. On this point only knowledge of your local conditions can help in deciding.

Quince Tree Dying

I send specimens of leaves from my quince. What is the trouble with them? Other bushes near are also affected.—Subscriber, Orosi.

These leaves had a burned appearance, especially about the edges, but there was no indication of fungus trouble. However, we sent to Prof. Fawcett, who writes:

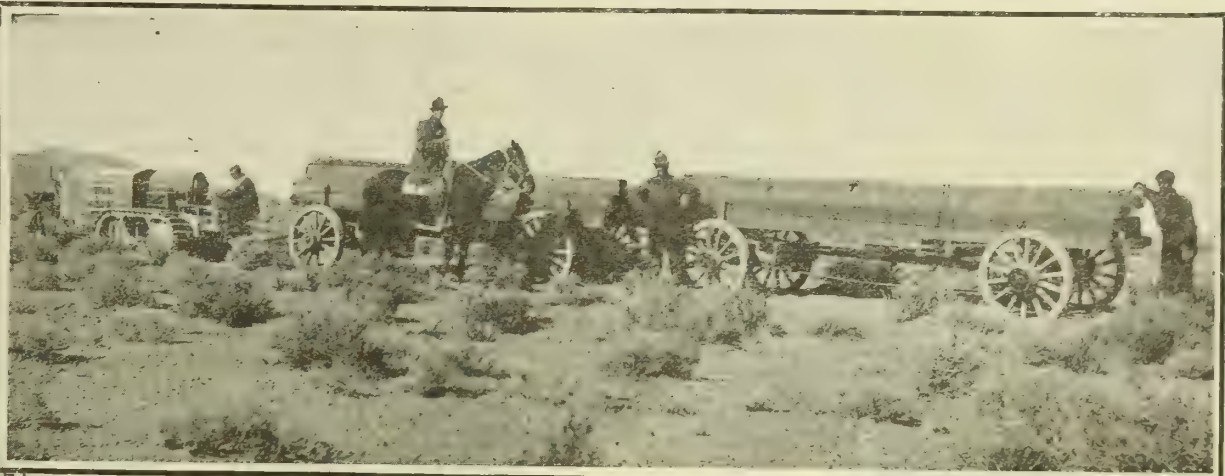
"I fear I cannot help you out much on this trouble. It is not any fungus disease with which I am acquainted. It

is possible that the tree is suffering at the roots or that it may have a bacterial blight farther back on the limbs from which these leaves were taken. The quince trees are sometimes quite subject to the same bacterial blight that attacks pears and apples. This is only a conjecture; the trouble could not possibly be ascertained certainly from these leaves."

Roup

My hens, White Leghorns and Barred Rocks, were three weeks ago in fine condition and laying well, when they were exposed to roup. Now about 90 hens and young pullets have the disease in various forms, bronchial, catarrhal and canker. Can you suggest treatment, or is the case hopeless?—Subscriber.

It is difficult to treat a whole flock for roup. Your main dependence will have to be upon sanitation. Do your houses lack sunshine? Have the birds been overcrowded? Are their sleeping quarters dirty or drafty or damp? Have they as much fresh air at night as you like yourself? Are the yards and houses on high, dry ground, or is there standing water about? Look the premises over and correct whatever is wrong. I am not familiar with the roup cure you mention. Probably it is as good as any. I have found nothing better for the catarrhal form of roup than the potassium permanganate treatment. Dissolve a few per-



During the construction of the transcontinental Telephone line by the Pacific Telegraph & Telephone Company, in 1914, a model 18 Yuba Ball Tread Tractor was part of their equipment.

The remarkable performances of this machine in the Nevada desert and what is known as "Humboldt Sink" are best told by repeating portions of the letter of Mr. O. R. Cole, who was Division Superintendent of Construction.

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manganate crystals in a quart cup or lard pail of warmish water, just enough to redden the water. Into this solution dip the head of the affected bird, holding it under a few seconds so that the solution may be drawn into the air passages. Do this twice daily, and I think you will see improvement. When there is rattling in the throat a daily dose of quinine, one grain to the dose, sometimes helps, and a tablespoon of olive oil now and then is always good. Swab the canker spots with peroxide and if there are swellings filled with pus, open and cleanse with peroxide. There are roup cures galore, but the best of them only lock the door after the horse is stolen.—J. A. K.

Turkey Chicken Pox

My turkey gobblers have large, whitish sores on heads, almost closing the eyes. They have always roosted in the open and appear perfectly healthy. What is the cause and remedy?—Subscriber, Madera.

Your turkeys have chicken pox, which is so contagious that it may be carried from flock to flock on clothing or utensils, and is believed to be disseminated by vermin of various kinds. Procure from your druggist some calcium sulphide tablets. You can probably get one-grain tablets. If you cannot, you will have to use the powder. This drug is best given in a moist mash, once a day, one grain to each bird. Give daily for a week then skip a few days and repeat if necessary. The crust on the sores should be removed and the spots touched with a feather dipped in creolin. In light cases greasing the head with carbolated vaseline is sufficient.—J. A. K.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Citizenship of Child

Parents with child of four years immigrated to the United States in 1885. Father took out in 1892 the final naturalization papers. Has the child become a citizen also?—Subscriber, Escondido.

The naturalization of the father operates to confer the right of citizenship upon his minor child who though born abroad is dwelling at the time of his father's naturalization in the United States.

Collecting Wages

Did development work on ranch for nonresident, to be paid so much monthly. Payments were kept up 18 months. Last one made March, 1915. Owner sold ranch and improvements, tools, etc. I have in my possession wagon, scraper and harrow and some tools that would about cover bill. Can I attach and hold these until paid and at what expense and how go about it? Owner was a teacher getting good salary and owning own home.—Subscriber, Rio Bravo.

In view of the fact that your former employer sold his land as well as the implements thereon and you hold the said implements merely as the

servant of your former employer, you would have no right to touch these goods, as at the time when you levied your writ of attachment they belonged to the purchaser. Apparently your sole right of action is against the former employer. If this employer is resident of the state of California and the amount which he owes you is less than \$300 you can bring suit in the justice's court in the township in which you reside and send the summons for service upon your employer elsewhere, and thereafter prosecute the suit to judgment. If your employer is a school teacher you would no doubt be able to obtain payment of your account by filing transcript of the judgment with the auditor of the county wherein he teaches. If he is a non-resident of the state, however, you will have exceeding difficulty in collecting your account.

Storage of Explosives

How far must a manufactory of explosives be from residences in town, city or county?—Subscriber, Azusa.

The storage of explosives is entirely governed by county or municipal ordinances to which you would have to refer.

Water Stock

When my land was subdivided there were two shares of water stock to each acre. Had the owner of several years back the right to sell this water stock without the land?—Subscriber, Azusa.

There are some water companies wherein it is provided that the shares of water stock are appurtenant to the land and cannot be sold separate from that land. Other companies, however, are not so formed. You should look up the articles of incorporation and by-laws of the water company in question, which will probably give you complete answer.

Buying on Contract

About four years ago I bought a piece of land, contracting to pay so much cash and the balance so much a year. So far have made all payments on time, but there will be a payment come due in a few days and I can pay only half of the amount due, making the balance in six months. Should the seller not allow me to do this what steps can I take to keep from losing this place? I have spent considerable money to improve it besides making payments and do not want to lose?—Subscriber, Brawley.

I bought house and lot under contract (not recorded) and have made several payments. How can I get out of this deal and get some of my money back? The owner refuses to return anything.—Subscriber.

In answer to these two questions and because of the many similar questions received Mr. Stanton has given a very full answer.

The purchaser of land under contract should invariably record his contract for two reasons: First, there is no obligation in law that the vendor have title to the property at the time he enters into a contract to sell, and many cases have been known where the vendor did not have title to the property and where incumbrances which were against the property were foreclosed and contract purchasers lost all payments they had made; second, by recording the contract an interest in or to the property shows upon the records and under the recording laws of this state—and instrument first recorded is first in priority—thus in case the contract is not recorded and the purchaser has failed to make his payments the vendor may simply execute a deed to the property to some third party and all right of the vendee in or to the property is thereby cut off; whereas if the contract is recorded the vendor is obliged to bring action against the vendee for rescission of his contract of purchase for reason of the fact that

Continued on Page 583

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"AMERICA FOR ME"

'Tis fine to see the old world and travel up and down
Among the famous palaces and cities of renown;
To admire the crumbly castles and the statues of the kings,
But now I think I've had enough of antiquated things.

So it's home again and home again,
America for me!
My heart is turning home again, and there I long to be;
In the land of youth and freedom beyond the ocean bars,
Where the air is full of sunlight and the flag is full of stars.

Oh, London is a man's town, there's power in the air;
And Paris is a woman's town, with flowers in her hair;
And it's sweet to dream in Venice, and it's great to study Rome,
But when it comes to living there is no place like home.

I like the German fir woods, in green battalions drilled;
I like the gardens of Versailles, with flashing fountains filled;
But, oh, to take your hand, my dear, and ramble for a day
In the friendly western woodland, where nature has her way!

I know that Europe's wonderful, yet something seems to lack;
The past is too much with her and the people looking back.
But the glory of the present is to make the future free—
We love our land for what she is and what she is to be.

Oh, it's home again and home again,
America for me!
I want a ship that's westward bound to plow the rolling sea
To the blessed Land of Room Enough beyond the ocean bars,
Where the air is full of sunlight and the flag is full of stars.
—Henry Van Dyke.

THE HOME ROAD

By Elia W. Peattie in Youth's Companion

PRAIRIE, prairie, prairie, as far as the eye could see. No floor could be more level or treeless. A month ago it had been green, but now the grain had been gathered, and the denuded fields, which were only little patches in the vast stretches of yet unbroken plain, were tawny gold in hue. The sky was blurred with dust, the silence absolute. No bird sang, for birds do not come where there are neither trees nor water. The little sod house of one room with its door facing the east stood out like a wart on the unlovely face of the earth.

Out of the door of the hut came a woman and two children. The boy was ten years old, the girl seven, the woman no more than 30; but although she was so young, her face was tanned to the hue of leather and her eyes were sun-faded and wind-stung; yet her lips were tender, her smile gentle, and her faded hair rippled back from a broad and lovely brow.

"It's time to play, mother," said the girl. "You said you would play when the shadow lay in front of the house."
"Of course I'll play now, dear. Don't I play with you every day?"

"Some days are most like two days. Are days as long everywhere as they are here?"

They walked toward a broken down

cart that stood before their door. The wheels held, and the thills were still attached to the body of the vehicle, but the seat sagged and the floor was half gone.

"What game shall it be today? The same one?" The mother seemed to be hoping that the children would say yes.

"The same one," the boy answered. "There's no game like the home-road game, mother, is there?"

"The thills are turned the wrong way," said the mother. "They must be turned toward the east if we are ever to reach home."

"I'll turn them—I can do it alone. You let me do it, mother."

Ann Bliss stood aside for her son to wheel the cart round; she let him assist her to the seat and she reached down to help her little daughter up beside her.

"You in the middle, mother," said Jim.

"No, no. I'll drive better sitting at the right, won't I?"

They played the game very seriously.

"It's a long way for one horse to carry us," continued Mrs. Bliss, "but we've a pretty good horse."

"And plenty of feed for him in the sacks!" cried Jim.

"Oh, plenty! Of course we'll water him very often."

"Hurry up, mother!" broke in Hallie, eager to be done with the preliminaries. "Can't we start now?"

"We're off!" cried Mrs. Bliss. "Hurrah!"

"Hurrah!" cried the children. Hallie clapped her hands. They all laughed together softly, breaking that solemn silence of the plain.

"We're off," repeated Ann Bliss more gravely, "and here we go over the prairie. It's flat and it's hot, but we keep driving and driving, because we know that by and by we shall be coming to the home road. Once in a great while we reach a cabin, and then we call to the people and they come out and ask us to spend the night with them. They are very kind, and give us something of all that they have. They have boys and girls, and we play with them, and when we go on the next morning, we hate to leave them, because they have become our friends; but we can't stop long—"

"We have to keep going on!" cried Jim. "'Cause we're going home!"

"We're going home," said Jim's mother. "Though two of us have not seen home at all, yet we all know perfectly what it is like. So we keep driving and driving. After a while we come to some rivers, and we drive through them, for they are shallow and broad. We love to hear the water singing, and we are glad there are trees growing beside the rivers. We can hear the leaves rustling, and when there is no house to take us in we lie all night underneath the trees. Then in the morning we build a little fire and cook our food. After that we go on again."

"We keep going on and on, don't we?" asked Hallie.

"On and on, and because we are driving with only one horse, it takes us weeks; but at last we come to the

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We can supply any periodical published. The lowest price of any not listed here will be quoted on request. Let us make you a price on any combination you may desire.

Periodicals in any combination may be ordered to the same or different addresses. Foreign or Canadian subscriptions are extra on account of added postage, and prices must be obtained by correspondence. Subscriptions may be either "new" or "renewals" (except where otherwise stated in the list), but it is important that this information be given in each case.

The pricing of various combinations of magazines is a simple matter; all are listed according to class number, and this class number multiplied by 5 gives the cost price.

EXAMPLE.

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40—The Review of Reviews	3.00
23—Delineator	1.50
18—Cultivator	1.00
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CLASS 7.

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McCall's	.50	\$1.70
Northwest Poultry Journal	.50	
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CLASS 9.

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		with
		Culti-
		vator
		\$1.35

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Home Needlework	.75	with
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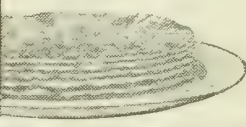
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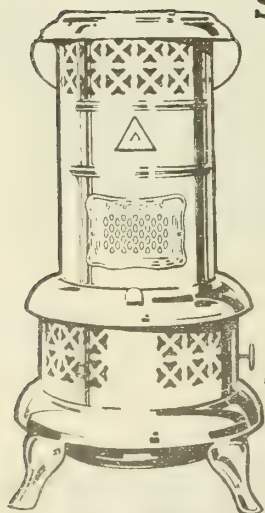
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biggest river of all, with hills beyond it, and when we have crossed the hills we know we are getting toward home. Jim keeps asking me how I know the home road, and Hallie keeps asking me, and I say, 'When you see a house with vine-covered gables standing where three roads meet, then you must take the road that runs straight east, and that will be the home road.'

"I'll take that road," said Jim. "You couldn't fool me about that road. It's in the middle like, isn't it?"

"It runs east, Jim, and there are trees all along the way. The Ealings have willows along their farm, and the Wilcoxes have poplars, but we have elms."

"What is an elm like, mother? Is it better than a willow or a poplar?"

"It is a big tree, like a plume, and so strong that it seems to be a friend. It does not sing so loud as the poplar, and it is not so beautiful as the willow in the spring, but, after all, it is the best of the three."

"Is an elm as tall as our house?" asked Hallie.

"Oh, it is many times taller than our house! It is a beautiful green. If only you had seen any sort of tree at all I could make you understand better what it is like; but never to have seen a tree—"

The woman broke off her story. For a moment she sat staring before her at that relentless plain. The distance melted into sallow dust; the arching sky was drab with it.

She spoke almost as if talking in a dream.

"We go on beneath the elms. There are blackberry bushes growing beside the road, and sweet clover is everywhere. You can see the corn tossing and rippling like the sea, and hear the birds. The robin sings and the meadow lark whistles. Best of all, you can hear children calling to one another, and the roll of wheels along the road. Women are laughing, and men are talking to their horses and whistling to their dogs. The air is full of sounds. There is a spring in the bank just as you turn in at the wagon gate, and you can hear that whispering. In the night, now, I often hear it whispering."

Her lips were dry, and the children heard a little catch in her throat. Jim drew closer to her.

"Don't talk about 'now,' mother. Please!"

"No," she said, "I'll not talk about 'now.' I'll talk about the time to come, when we are turning in at the wagon gate. We are there, you see. Jim has opened the gate for us, and we are driving through. The Persian lilacs are so high that we can't see the lower story of the house at first."

"Only the upper story," broke in Jim. "Five windows all in a row."

"With the sun shining on them—"

"Making them gold!" cried Hallie.

"And vines are climbing round them, and inside white curtains are fluttering. We go on round the little turn and then we get past the lilacs. We can see the goldenglow and the hollyhocks, and then the lower story of the house. There is the porch, and through the open door we can look down the wide hall. It is all green in the hall—the walls are green, the floor is covered with green carpeting. A tall clock stands opposite the fireplace. No one is in the hall, and we go in as quietly as we can, to surprise grandmother. Hallie wants to stop at the doors of the different rooms. I try to drag her on, but I can't keep

her from taking a look at the parlor, where the chairs are with the carved swans' heads. Jim can see the goldfish swimming in the globe in the dining room, but I'll not let him stop. I take him on down the hall, and we all come out on the rear porch, which is even pleasanter than the front one. There are crimson creeper roses on the trellis, and the old splint-bottomed chairs have cushions in them. There is a hammock and a swinging couch, and a table with grandmother's workbasket on it. At first we can see no one, and just as we are about to call out, a woman comes toward us from the garden."

"Grandmother," whispered Hallie.

"She is tall, and her hair shines like silver. She wears a white dress, and she carries a basket of flowers. She is singing softly, and her voice is like sad, soft bells, and that makes us all know that she is thinking of us—of her daughter who left her home 12 years ago, and whom she has not seen since, and of her grandchildren, whom she has never seen at all."

"Then," broke in Jim softly, "she looks up—"

"She looks up," added his mother, "and—"

"Sees us," said Hallie.

"She sees us, and at first she stands still—she is so puzzled to find strangers waiting on her doorstep smiling at her like that. Then a beautiful light comes into her face. Though you two are so big, though I have turned so brown and ugly—"

"No, you haven't, mother!" cried both children.

"She knows us. She drops her flowers. They fall on the white path. Then she puts out her arms, and we go down the steps to her."

"I jump down all of them at once," declared Jim.

"I put you first, because I love you so," resumed Ann Bliss. "I let my boy and girl go to her first, although now that I see my mother, I, too, feel like a little girl. Then we are all in her arms. They are soft and white,—her hands are like snow,—and she leads all of us into her quiet house. We go to her sitting room, and she takes off our hats, and we sit down before her. None of us can talk, though we have a thousand things to say. Then—I think—it begins to rain a little, very softly; not a fierce, terrible storm such as we have here. No, the rain falls like music on the trees and the flowers, and the birds sing sweeter than ever. And we are at rest—we are at the end of Home Road."

The three were silent for a long time. The sun which had been well into the west when they left the cabin, began to plunge from sight. A chill crept over the plain.

"It is almost the last of our hot days," said the mother. "Back home we should have called this Indian summer. In a little while the cold winds will be blowing. Before we realize it, the winter will be here."

"They will be having beautiful fires in the fireplace in the wide hall back at home, won't they?" asked Jim.

"Yes, wonderful fires of wood. There will be apples and nuts to eat in the evenings—"

"Oh," cried Hallie, "is that father?"

Some tiny black creatures were crawling along the unmarked road that led to town. They were horses—almost certainly the horses of James Bliss, since other persons seldom came that way.

"It must be father," said Ann Bliss.

"Come, we'll have his supper ready for him."

"I'll turn the thills of the cart again, mother. He wouldn't like to know we'd been playing the home-road game, would he?"

"It would make him feel sad, son. It is foolish of us to play it, I suppose. You'll be drawing the water, won't you, Jim? Come, Hallie, you may set the table. I have the supper to get. We must have everything ready for your father when he comes in; remember, he has been driving 40 miles in this dust. It's not quite dark yet, but I think I'll light the lamp now and put it in the window. He likes to see it, even if it's not needed. It cheers him up when he's tired to know that we're still thinking of him."

"He wouldn't need cheering up so much if he could hear voices on the road, would he, mother? Or if there were other wagons passing him, the way there would be on the home road?"

Ann Bliss did not reply. She had let her mind carry her beyond the dreams that can be put into words into the dreams that are wordless; but as she dreamed, she worked.

Presently they heard the wagon. Jim and Hallie ran out with a shout. Ann Bliss heard their father's voice answering them; heard them unhitching the horses from the wagon; heard the horses being watered at the well; heard Jim running with them to the corral.

The door opened and James Bliss entered. He was only a little taller than his wife; a man with more force than grace, who yet carried his head well above his broad shoulders. His face, his hair, his clothes were covered with dust; but his blue eyes were as fresh and as clear as pools.

"Ann," he said. It was his brief salutation—his form of caress.

"Safe home?" said she, smiling. The wistfulness had not left her, but she was a little shamefaced before this man who lived in his "now," as Jim had called it. She knew he would not have chosen to have her entertain the children with visions that made her homesick.

"Is this fresh water, Ann?"

She nodded.

"Jim drew it for you, James."

He drank a glass. Then he filled the glass again and drank more slowly.

"Such a well, Ann! I've had many drinks of water since I left home, but not one of them touched the spot. That's what I said to the neighbors, 'You ought to have a drink from our well.' I went to see about a windmill while I was in town, and I've decided now that we can afford to put one in. By spring we'll have it running. Then we'll irrigate in a small way. You can have your garden, Ann."

"O James, do you think it will grow?"

"Do I think it will grow? It will grow like a miracle. The trouble will be to keep it from growing. Supper ready?"

He stepped to the door and called the children. They came in with their arms full of things that they had taken from the wagon—cans and boxes of food, small sacks and bundles. - While he was emptying Hallie's arms for the second time, Jim came running in with a long package in his arms.

"Oh, those weren't to come in, son," said James Bliss. "They're much better outdoors where it's cool. In the morning we can see to them."

"But what are they, father?"

"Little trees, Jim—elms."

"Elms!" Ann Bliss let drop the word. The children were very still. One might have thought they were in the presence of something holy.

"What is it?" asked James Bliss, startled.

"They have never seen trees," James," said Ann, softly. "Will you undo the bundle?"

The man tore off the gunny sacking and the children looked at the saplings. "There are not nearly so large as the house, mother!" cried Hallie, in anguished reproach. "Are these really elms?"

"Poor child!" murmured the man. There were tears in his eyes. There was much that went on in that house that he did not quite understand—that, perhaps, he did not choose to understand; but he comprehended this.

"But they will grow to be much taller than this house, Hallie," he said gently. "They will have many great branches, and all summer they will give shade. Then the birds will come here, and other little creatures—squirrels, perhaps. I will send for some squirrels. They are almost as good as children, they are so playful."

"Supper is ready," said Ann. Her voice was toneless, like that of one who dares not betray her thought. They ate in silence, for dreams had gained the mastery over them all; but the woman knew, and the children knew, that it was the man who had brought their dreams into their "now."

After the supper dishes were cleared away, the children and the weary man went to their beds. Ann Bliss sat sewing for a time by the lamp. Then, when she was sure that all were sleeping, she went out, drew up pail after pail of water from the well, and drenched the young trees with it. She piled more wet earth about their roots. Then she walked up and down on the trampled, hard earth before her sod cabin.

The arching vault of heaven, cloud-

Continued on Page 583



"John"

"We are almost out of chocolate. Get a 3-lb. can of Ghirardelli's Ground Chocolate. Don't buy the bulk kind."

And John "obeyed orders" cheerfully, for of all the members of the household, John, the "boss," likes his breakfast cup of Ghirardelli's the most.

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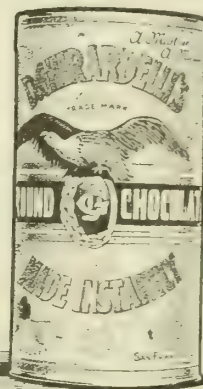
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San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Dec. 8, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 cents above following quotations:
Creamery Extras 27
Firsts 24

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies 15
Arizona Longhorn 17@17½
California Fresh 16½
Eastern Cheddar 20@21
Domestic Swiss 23
Eastern Daisy 19½
Eastern Twins 18½
Imported Swiss 40
Longhorn 16½@19
Oregon Triplets 17@18½
Tillamook 18@18½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:
Fresh Ranch, case counts 39
Candled 41@43
Northern Fresh Extras, f.o.b. S. F. 43½

Prices to producers:

Hens, lb. 15@17
Roosters, old 9
Broilers, lb. 25
Fryers 18
Roasters, lb. 14
Turkeys 16@19
Ducks 15
Geese 12
Squabs, doz. 1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt. 6.50
Prime Steers 7¼@7½
Elfers 6¼@6½
Calves, lb. 9@9½
Sheep—
Ewes, head 4.50
Wethers 5.00
Lambs, head 5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug 60
Rurals 1.35@1.40
Idaho Russets 1.65@1.70
Northern Burbanks 1.60@1.75
Salinas 1.85@1.90
Seed Potatoes:
Early Rose 2.15@2.25
White Rose 1.75@1.80
American Wonder 2.00@2.10

ONIONS

Wholesale selling price:
White Globe, lug 1.00
Brown Globe, cwt. 1.65
Garlic 15
Sets—
White, lb. 9
Yellow, lb. 8

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz. 1.25@1.35
Beets, doz. 35
Beans—
Wax 8@9
Limas 7@8
Green 8@9
Brussels Sprouts, lb. 9@10
Cabbage, sack 1.25
Northern, lb. 2
Carrots, doz. 30
Cauliflower, doz. 40@50
Celery, doz. 75
Chicory, doz. 40
Chives, doz. 1.00
Corn, lug. 65
Cucumbers, lug. 1.75
Egg Plant, lb. 6@7
Escarole, doz. 90
Horseradish, lb. 10@11
Leeks, doz. 1.40
Lettuce, doz. 40
Mint, doz. 40
Okra, lb. 10
Onions, Green, doz. 20
Oyster Plant, doz. 40
Parsnips, doz. 35
Peas, Telephone 10
Peppers—
Bells 6@7
Chili, lb. 6@7
Pimientos, lb. 6
Rhubarb—
Strawberry 1.00
Winter Crimson 85
Spinach, doz. 20
Squash—
Crookneck, lug. 60
Hubbard, lb. 1¼@1½
Small Cream 45
Summer, lug. 1.00
Tomatoes 65@75

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower 1.10@1.25
Jonathans 1.70@1.90
King David 1.50@1.65
Pearmain, White 1.00@1.25
Pearmain, Red 1.10@1.15
Yellow Newtown Pippins 1.10@1.15
Bananas, lb. 4
Berries—
Strawberries, basket 8@10

Blackberries, basket 12
Raspberries, basket 13@15
Casabas, crate 2.50
Cranberries, bbl. 11.75
Figs—
Blk. box 1.10@1.25
White 85@90
Grapes—
Black Hamburg, lug 75
Malagas, lug. 1.25
Morocco, lug 1.00
Cornichon, lug 90
Red Emperor, lug. 1.50
Peaches—
Clings, lug. 1.00
Pears, Bartlett, packed box 3.00
Winter Nelis, lug. 1.50
Persimmons, lb. 6@7
Pineapples, lb. 6@7
Pomegranates, half orange box 1.50
Quinces, lug. 50
Watermelons, lb. 1@1½

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Lemons 2.00@2.50
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Grapefruit, Seedless 4.50@5.00
New 2.75
Limes, basket 1.00
New Navels 2.75
Tangerines, half box 2.50
Valencias 4.00@5.00

DRIED FRUITS

Wholesale prices to retailers are:

Evaporated Apples, Fancy, boxes 8@9
Apricots 9½@15
Peaches 5½@7
Pears 11
Prunes, fancy pack 5½@15

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	14.00
No. 2	12.00	10.60
Buds	20.00	17.50
Jumbos	18.50	16.60

See almond quotations by Association under San Francisco.
Feanuts—
California, Raw 5@6
Japan 5½@6
Eastern 6¼@7
Chinese 5
Pecans 17

HONEY

Wholesale selling price:
Comb, Fancy Water White 16
Extracted Water White 7½@8
White 7
Light Amber 8
Beeswax 25@26

BEANS

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Lady Washington 7.00
Pinks 5.50
Black Eyes 4.00
Lentils 17.00@20.00
Manchurian Reds 4.00@4.25
Small White 6.75
Garbanzos 5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley 14.00@17.00
Wheat Hay 12.00@16.00
Tame Oat 16.00@20.00
Alfalfa 12.50@15.00
Volunteer 8.00@10.00
Straw 6.00@7.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
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Corn, White 2.10
Wheat 2.10@2.15
Oats, White 1.75
Oats, Hulled 1.20@1.30
Egyptian Corn 2.25
Kaoliangs 1.85
Barley Seed 1.50
Barley, Hulled 1.65
Kafir 1.95
Milo 1.75
Rye 1.60
Sunflower Seed 2.00
Sunflower Seed 6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal 1.25
Bran, Heavy 1.55
Alfalfa Molasses, per cwt. 1.35
Beef Scraps 3.05@3.15

WEATHER CONDITIONS

For the Week Ending December 4, 1915

Report from the various California Stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date
Eureka	2.18	9.06	10.62
Red Bluff	4.04	5.97	6.13
Sacramento	1.76	2.58	4.03
San Francisco	3.41	4.35	4.53
San Jose	2.80	3.03	3.52
Fresno	2.28	2.56	2.19
Independence	.16	.25	2.12
San Luis Obispo	2.25	2.59	3.72
Los Angeles	1.36	2.70	2.56
San Diego	.50	1.22	1.48

Temperature Data

	Past Week—	Maxi-mum	Mini-mum
		64	38
		60	40
		62	38
		66	48
		70	34
		70	38
		60	—
		78	38
		80	52
		76	48

Beet Pulp 1.25
Molasses Beet Pulp 1.20
Cracked Corn, cwt. 2.05
Cracked Wheat, cwt. 2.25
Cotton Seed Meal 1.90
Bone, Green 1.85@1.95
Meat Meal 3.00@3.10
Charcoal 1.90@2.00
Oil Cake Meal 2.50
Fish Meal 3.15@3.25
Rolled Barley 1.60
Rolled Oats 1.80
Middlings 1.80
O. & W. Middlings 1.85
Feed Meal 2.10
Scratch Feed 2.10@2.20
Oyster Shell 1.15@1.25
Scratch Grits 2.30@2.40
Best Chick Feed 2.80@2.90
Poultry Mash, 90-lb. sk. 1.90@2.00

San Francisco Markets

SAN FRANCISCO, Dec. 7, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras 27½
Prime Firsts 25
Firsts 24

CHEESE

Wholesaler to retailer:
Young Americas 16
California Flats 14½@17
New York Cheddar 19
California Cheddar 17½
Oregon Twins 15½
Oregon Young America, fancy 15

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh Extras 43½
Select Pullets 38½
Hens, lb. 12@16
Fryers 19@21
Broilers 23@26
Roosters—
Young 19@20
Old 8@10
Squabs 3.00@3.50
Turkeys—
Live Young 19
Live Old 17@19
Dressed, Young 24@27
Dressed, Old 22@24
Ducks 10@13
Geese, pair 2.00@2.25
Belgian Hares—
Live 7@8
Dressed 10@11½

LIVE STOCK

San Francisco prices, gross weight:
Steers 4@6½
Cows and Heifers 3@5½
Calves, lb., live wt. 6@9
Hogs 4@6½
Wethers 6@6½
Ewes 5@5½
Milk Lambs, lb. 7½@7¾

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt. 1.25@1.50
Delta Burbanks, cwt. 1.00@1.45
Sweets 1.20@1.30
Oregon 1.10@1.30
Idaho Rural 1.00@1.10
Idaho Russets 1.10@1.25

ONIONS

Wholesale selling price:
Onions, cwt. 65@95
Garlic, lb. 12½@15

VEGETABLES

Wholesale selling price:
Artichokes, doz. 20@35
Beans—
String, lb. 5@7
Limas, lb. 4@6
Wax, lb. 5@7
Celery, crate 2.00@2.50

Cucumbers, doz., hothouse 50@60
Egg Plant, southern, lb. 5@8
Lettuce, crates 1.25@1.75
Okra, lug 40@65
Peas, Southern 6@8
Peppers—
Chili, lb. 2@3½
Bell, box 40@55
Rhubarb 75@1.00
Squash—
Summer, lug 80@1.00
Cream 50@65
Hubbard, sack 65@75
Tomatoes, lug, local 25@50

FRESH FRUIT

Wholesale selling price:

Apples—
Newtown Pippins 65@1.00
Pearmain, White 65@85
Jonathans 60@1.00
Bananas, Hawaiian, bunch 1.00@1.75
Cranberries, Eastern, bbl. 10.50@11.50
Oregon, box 3.75
Grapes, all varieties, crates 50@75
Pears—Winter Nelis, box 1.00@2.00
Cooking 50@1.00
Persimmons, box 60@1.00
Pineapples, doz. 1.25@2.00
Pomegranates, half orange box 75@1.00
Quinces, box 1.00@1.50
Strawberries, chest 4.00@5.00

CITRUS FRUIT

Wholesale selling price:

Grapefruit—Seedlings—New 2.75@3.00
Lemons 1.50@3.50
Lemonettes 1.50@1.75
Limes, Mex., cs. 5.50@6.50
Navels, new 3.00@3.50
Valencias 2.25@4.50

DRIED FRUITS

Wholesale prices are:

PRUNES—Local selling price, bulk basis in carload lots, 1915 crop: Santa Claras, 30-40s, 7c; 40-50s, 6c; other sizes, 5@5½c. All outside sections ¼c lower.
Other Fruits. Stand-Extra
50-lb. boxes ar. Choice Choice Fancy
Peaches 4½c 5½c 5½c 6c
Pears 6½c 8c 8½c 10½c
Apples 8c 8½c 9c 9c
Apricots 9c 10½c 10½c 11½c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5½c; 4-crown, 6c.
The above prices are for November, and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.

Nonpareil 15
IXL 13½
Ne Plus 13
Drake's 11
Langrudocs 11
Peanuts—
Unpolished 3¼@4¼
Polished 4@5¼
Shelled, China 5½@6

BEANS

Wholesale selling price:

Limas 4.95@5.00
Pink 4.70@4.75
Black Eyes 3.75@4.00
Cranberry, California 5.50@5.60
Small White 6.00@6.10
Garbanzos 4.00@4.25
Large White 6.10@6.15
Bayou 5.50@5.60
Manchurian Speckled Bayous 4.00@4.25
Red Mexican 4.75@5.15
Red Kidney 8.00@8.25
Horse Beans 2.00@3.50

HONEY

Wholesale selling price:

Comb. Water White, new 14@16
Light Amber, new 11@12
Amber, new 7@8
Extracted White 7@8
Light Amber 4@5½
Dark Amber 2
Beeswax 25@28

RICE

Price net to growers at shipping points.
California Waterbury, lb. 2@2.15c

HOPS

1915

Wholesale selling price:
Sacramento Valley 9@10½
Sonoma-Mendocina 10½@12
Oregon-Washington 10@12

HAY

Under date of December 4 Scott, Magner & Miller say:
Receipts for the past week were 2861 tons, the previous week 2729, and the week preceding 2663 tons.
Fancy grades of wheat are very scarce and the same grade of red oat are almost nominal and will bring top figures whenever available. Interior trade is very good and we believe will continue so throughout the season. More hay is being shipped into the interior at the present time than is being sent to the San Francisco market. Southern trade continues good. Export trade is normal. Alfalfa is in very light supply with

the demand good. Straw is dull and inactive.

We quote the average wholesale prices for hay in carload lots on today's market as follows:

Fancy Wheat Hay (11 bales).....	17.00@18.00
No. 1 Wheat or Wheat and Oat.....	12.00@15.00
No. 2 Wheat or Wheat and Oat.....	10.00@11.50
Choice Tame Oat.....	15.00@16.50
Other Tame Oat.....	10.00@14.50
Wild Oat.....	8.00@11.50
Alfalfa.....	10.00@14.00
Stock Hay.....	6.00@8.00
No. 1 Barley Straw.....	25@40

GRAIN

Alfalfa Seed.....	16@17½
Wheat, Cal. Club.....	1.60@1.70
Blue Stem.....	1.80@1.82½
Barley Feed.....	1.25@1.32½
Shipping and Brewing.....	1.32½@1.35
Corn, Eastern Yellow, old.....	1.67@1.68
New.....	1.55@1.62½
Corn, Egyptian White.....	1.47½@1.50
Oats, Red, Feed.....	1.27½@1.35
Oats, Red, Seed.....	1.40@1.50
Oats, White, Feed.....	1.37½@1.40
Oats, Black, Feed.....	1.50@2.00
Millet.....	91¢@93
Rape.....	2¼@2½
Flaxseed.....	5@5½
Rye.....	1.55@1.57½

FEED STUFF

Wholesale prices	
Alfalfa Meal, car lots.....	16.50@17.50
Bran, ton.....	25.00@26.00
Feed Cornmeal.....	38.50@39.00
Cracked Corn.....	38.50@39.00
Rolls Barley, ton.....	27.50@28.50
Middlings.....	31.00@33.00
Shorts.....	26.00@27.00
Oilcake Meal.....	37.50@39.00
Cocoanut Oilcake Meal.....	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Nov. 8, 1915.

Oranges are selling approximately 50 cents better than a year ago this date. There have not, however, been as many Navels shipped, but it is felt that with better grade of fruit there will be an increased demand later as the larger supply of fruit is to be had. Floridas are not as fine a quality as usual, which is a material aid to the best grade of Californias. One trouble with the Californias is the matter of size. They are running very large, the trade having preference for the smaller sizes. Present prices are running around \$3.25 f. o. b. California.

The state horticultural commissioner's crop report issued December 6 gives the following percentages or normal as his estimate for this year's orange crop: Fresno County 65, Kern 50, Los Angeles 80, Orange 90, Riverside 50, Sacramento 100, San Bernardino 75, San Diego 80, Santa Barbara 100, Tulare 70, Ventura 70. Lemons: Los Angeles 100, Orange 105, Riverside 95, Sacramento 100, San Bernardino 85, San Diego 75, Santa Barbara 100, Tulare 70, Ventura 85. The estimate for grapefruit varies from 80 to 100 per cent in the various counties.

There are a few foreign lemons still arriving, at present only about 17,000 boxes being afloat around pier. Prices are fully as good as during any preceding year this date. Practically all fruit is being shipped as soon as properly sweated after picking. Prices range around \$3.00 f. o. b.

Shipments

Shipments of oranges from Southern California since November 1, 1915, 614 cars, lemons 449, total 1063. To same date last year, oranges 412, lemons 354, total 766. From Central California since November 1, 1915, oranges 1260, lemons 49, total 1309. To same date last year, oranges 1494, lemons 66, total 1560. From Northern California points, oranges 189. Last year same date, 187.

NEW YORK, Dec. 6.—Four cars navels, two cars Valencias, four cars lemons sold. Market is strong on both oranges and lemons. Cloudy.

VALENCIAS—	
Mother Colony, S.T. Ex., iced.....	\$4.65
Carnival, S.T. Ex., iced.....	5.10
Montezuma, S.T. Ex., iced.....	3.55
Toltec, S.T. Ex.....	2.90
Stella, S.T. Ex.....	2.60
NAVELS—	
Signal, Stewart Ft. Co.....	\$3.10
Blue Label, imp., Stewart Ft. Co.....	3.25
Forget-Me-Not, T.C. Ex.....	3.35
Stratford, T.C. Ex.....	2.80
LEMONS—	
Mid-California, T.C. Ex.....	\$3.80
State Center.....	3.55
Pet.....	3.60
Greyhound.....	3.45
Trail.....	3.80
Canyon.....	3.55
Hiddendale, E. C. U.....	3.55
Del Diablo.....	3.45

CLEVELAND, Dec. 6.—Four cars sold. Market lower on oranges and lemons.

VALENCIAS—	
Montezuma, S.T. Ex.....	\$3.60
Toltec, S.T. Ex.....	3.15
Stella, S.T. Ex.....	2.90
NAVELS—	
Niagara, Stewart Ft. Co.....	\$3.10
LEMONS—	
Pico, S.T. Ex.....	\$2.80
La Puente.....	2.40

PITTSBURG, Dec. 6.—Two cars sold. Market is steady on oranges and lemons.

VALENCIAS—	
Golden Cross, O.K. Ex.....	\$4.15
Red X, O.K. Ex.....	3.80
Blue U, O.K. Ex.....	2.95
LEMONS—	
Honey, L.M. Assn.....	\$3.80
Hetch-Hetchy.....	3.25
Heart.....	3.95

Washington..... 3.05

ST. LOUIS, Dec. 6.—Two cars sold. Market is steady on lemons.

LEMONS—	
Miramar, C.S. Co.....	\$2.70
Las Fuentes, C.S. Co.....	3.40
Montecito, C.S. Co.....	3.05
Arab, S.D. Ex.....	3.30
Pup, S.D. Ex.....	3.00

CINCINNATI, Dec. 6.—One car lemons sold. Market is strong.

LEMONS—	
Bridal Veil, V.C. Ex.....	\$2.65
White Cross, V.C. Ex.....	3.40
Rough Diamonds, V.C. Ex.....	2.85

BOSTON, Dec. 6.—Two cars sold. Market is steady.

LEMONS—	
Trail, A.C.G. Ex.....	\$4.30
Canyon.....	4.20
NAVELS—	
Pocahontas, T.C. Ex.....	\$3.50

PHILADELPHIA, Dec. 6.—Two cars sold. Market is lower on both Valencias and lemons.

VALENCIAS—	
Rooster, Or. Ex.....	\$4.40
Searchlight, Or. Ex.....	3.00
LEMONS—	
Sespe, F.C. Ex.....	\$3.90
Alamo.....	3.65
Oriole.....	3.80
Cycle.....	3.90

CHICAGO, Dec. 6.—Several freezers of California strawberries of varying quality arrived today, and are slow at 20¢ 25 per pint. Apples, barrels, \$2.75@3.50; Western, boxes, \$1.35@2.75. Lemons, boxes, fancy California, \$4.00@4.25; choice, \$3.75@4.00. Oranges, boxes, fancy California Valencias, \$4.75@5.50; common to good, \$3.75@4.25; navels, \$4.00; Florida, \$3.50@3.75; Satsumas, half boxes, \$1.75@2.25; Tangerines, straps, two boxes, \$3.50@3.75. Grapes, cases, four baskets, Malaga, \$1.25@1.50; Red Emperor, \$1.25@1.60; fancy clusters, \$1.75@2.00; drums, 50 pounds, Emperor, \$3.50@4.00. Pears, boxes, 50 pounds, Buerre de Anjou, \$4.00@4.25; Winter Nelis, \$2.50@2.75. Pomegranates, half orange boxes, \$2.00@2.50. Grapefruit, unusually slow; boxes, fancy Indian River, \$3.00@3.25; Florida, \$2.50@3.00; Isle of Pines, \$1.75@2.50. Pineapples, crates, Hawaiian, \$3.00@3.25; soft down to \$1.00. California casabas, about cleaned up, no quotations today.

THE HOME ROAD

Continued from Page 581

less and as deep in color as the ocean, was glorious with stars. Beneath its splendor she felt her soul grow. New visions of flowers in the desert, of trees along the unmarked road, of the homes of happy men in the grim solitude where her man was now fighting his battle alone. The service of the pioneer to man was revealed to her, for that one hour, as the highest of all services. She walked with her head lifted high, contemplating the stars that offered their magnificence, not for the future, but for the present.

Suddenly, half laughing, she ran toward the broken down cart in which she and the children played their "home-road" game. She dragged it after her to the rear of the house. An axe lay there. She lifted it, and shattered first one thill and then the other. She broke in the floor, and knocked off the rickety seat. Never again could they sit in it, with their gaze strained eastward.

She was still laughing—or weeping—she could not be sure which; but she was happy. At last she knew herself as the fit mate of a pioneer, the full mother of children who would use their "now" to create comfort and beauty in what had seemed to her until then no more than a disconsolate wilderness.

PLAN OF ORGANIZATION

Continued from Page 563

As incidental to the carrying out of the foregoing purposes, to acquire information concerning the lima bean industry, its soil, its production, the manner and method of distributing and marketing the lima beans, the localities in which the same are consumed and the prices for which the same are sold; to establish a standard of quality and to market said beans, if it is desired, under a trademark indicative of such quality; to advertise its product and by all other lawful and legitimate means and methods to further the best interests of the growers of lima beans and to provide a wider and more extended market for such crops.

The articles here will determine on what basis the local associations may vote in shaping the policies of the central association. These local associations may vote either by one vote to each association, or the articles may provide that the local associations may have a vote in the affairs of the central association

proportionate to the tonnage handled by each of the local associations through the central association. Personally I prefer the equality of voting power because I believe it is more democratic and more in spirit with cooperative marketing, at the same time there are other able reasons for the contrary view, and which ever is adopted can be successfully made a part of the proposed plan.

LEGAL QUERIES

Continued from Page 578

he has not complied with the terms thereof.

Actions brought upon these contracts of purchase are upon the equity side of the court and as one of the maxims of equity is "Equity abhors a forfeiture" the court very frequently gives the vendee additional time in which to pay the balance due. The contract purchaser has an interest in the property, which he is entitled to sell and this is the most frequent method of realizing upon the money that has been paid in. Although a contract usually specifies that time is of the essence thereof, this provision has been held to be waived where a vendor has accepted payments made after the exact time upon which by the contract they are due. Frequently if the contract is recorded and a suit is thus necessary in order to regain the property by the vendor an amicable and equitable settlement can be made as people do not generally desire to bring law suits where they can otherwise obtain substantial justice nor do they desire to appear in court in the character of insisting upon strict performance in such method as apparently to take advantage of the necessities of people in such cases as above.

A deed and mortgage are undoubtedly the best method for the purchaser as thereby he is assured of his title to the property and upon a mortgage foreclosure he has a year in which to redeem. Under the contract he is not entitled to any redemption and as a usual proposition he has had no search made as to the title to the property; frequently the vendee even neglects the ordinary precaution of recording his contract, so that the contract method while it has grown into considerable use throughout this state, benefits rather the vendor than the vendee; however, it is more beneficial to the vendee than is the trust deed method, except in this case, that the trustee under a trust deed usually requires a considerable fee upon the foreclosure of the trust deed which frequently operates as a deterrent upon the holder of the note. In case of the trust deed, however, the purchaser can usually be assured that upon payment made he will receive clear title to his property as that is a matter which the trustee usually looks into for his own benefit. In any individual instance it would be well for the contract purchaser who feels that he is embarrassed by the owner or in danger of loss of property through failure to make prompt payment, to visit a good attorney in his locality and lay the whole facts in the case before him, as a small fee thus expended in advance would probably be the means of saving a great amount of trouble, worry and expense.

THE ARMSTRONG NURSERIES

The 1916 catalog of the Armstrong Nurseries surpasses all the other beautiful catalogs gotten out by this nursery. Mr. Armstrong is nothing if not artistic and his talent is shown in this 64-page book. It is not only a thing of beauty but it contains a world of information for every planter. A paragraph is given to each variety of fruit, its time of ripening, character of the fruit, as to whether the plant is a strong or vigorous grower, size of the tree or plant, and many other valuable points.

Best of all, there is back of the catalog a business founded upon the principle, "Good Service and Perfect Satisfaction." Write Mr. Armstrong regarding this catalog.

Mr. Claud D. Tribble writes that the Tribble Nurseries are now growing at their own trees and on new land near Lodi, San Joaquin County. The Tribble people have built up a name for supplying thoroughly good nursery trees and they are specializing along the line of nut trees. Their exhibit at the 1914 state fair comprised more varieties of nuts than those of all other exhibitors combined.



Veterinary Queries

Anasarca

We have a horse that has been sick for some time with kidney trouble. He swells up and then swelling goes down and comes back in another place. First his hind legs swelled and he was so stiff he could hardly walk, then his head swelled, then between his fore legs and half way back on his stomach. Now it is between his hind legs and about half the length of his stomach. Would like to know what can be done to reduce the swelling.—Subscriber, Torrance.

For lack of a better name we will call it anasarca, a term that is often used in referring to a complication of troubles that often follow cases of influenza and manifest themselves with such symptoms as you describe. Perhaps it would be better to say that often after mild cases of distemper or influenza the blood of the animal is left in a poisoned condition and the symptoms are manifested by swellings that shift about from one part of the body to another and disturb the action of the different organs they happen to be nearest. The following treatment will usually eliminate the trouble. Get of your druggist: carbolic acid, two drams; alcohol, two ounces, and enough water to make eight ounces. Mix. Give half an ounce morning and evening on the tongue or mixed with half a pint of water as a drench. During the time you are using this medicine also give the following dose every other day until five doses have been given: Epsom salts, six ounces; common salt, two ounces, and powdered nux vomica, two drams. Give this dry on the tongue by raising the horse's head as when giving a drench and putting a tablespoon at a time well back on the tongue until the dose is all given. The above amount is for each dose.

Scours

I have a heifer nearly 13 months old that has been scouring for nearly two months. For a time she did not seem to mind it much but is now getting quite thin. She does not eat very much although she still eats hay regularly and does not seem to be in great pain. Have tried several remedies suggested by neighbors and some have partly stopped it for a brief time only. I would like to know what is wrong and what to do.—Subscriber, Napa.

Scours as you describe it may be due to any one of many diseases, as chronic indigestion, tuberculosis of the bowels, worms of several different kinds, and a more recently discovered chronic bacterial dysentery sometimes called John's disease. This latter is not well understood yet and its treatment has not been very successful. In your case would advise first emptying the bowels by giving the following: Aloin, one ounce; turpentine, three ounces, and raw linseed oil, one quart. Mix and divide into two doses. Give as a drench 24 hours apart. Follow this by giving once a day for a week one teaspoon of zenoleum dissolved in a quart of water as a drench. If this fails please advise us and refer to this article; giving the date of the paper it appears.

GERMAIN'S POULTRY SUPPLIES

The Germain Seed & Plant Company is now mailing its special poultry supply catalog. Everything for household pets is to be carried this season by the Germain people. Incubators, brooders, remedies, condiments and all kinds of supplies and appliances needed in the poultry yards are illustrated and described. If the Cultivator is mentioned this catalog will be sent without cost.



Note the straight, strong trunks, the height, size and well-formed growth of these Stark City grown 2 year apple trees. All our trees are hardy and specially trained in the nursery row to develop heavy, wide-spreading roots, and well-balanced, symmetrical trunks and heads.



William P. Stark inspecting outgoing shipments. Every operation is done by skilled experts under the direct supervision of William P. Stark, whose 35 years experience assures you tree quality such as you get nowhere else. We use the same painstaking care in grading, inspecting and packing the trees as in growing them.



Our "3,000 Mile Package" brings the trees direct to you, fresh, full of life and vigor—no rehandling, no exposure, no drying out of roots or tops. The trees reach you in perfect condition for planting. We ship thousands of trees all over the world in these "3,000 Mile Packages" every season.

"Buy Your Trees Direct!"

—says Uncle Sam

"If the farmer makes his purchases direct from the nurseryman he will save the expense of the agent and is less liable to the mistakes in injury that may occur through repeated handling."

—United States Department of Agriculture—Farmer's Bulletin No. 113

30,000 Fruit Growers Saved 1/3 to 1/2 Last Year

Read What They Say! Then Write For Book!

Buying Direct The Right Way—"Your way of selling direct to the planter is the correct way. It pays to get the best stock regardless of price."—W. T. Weir, Henderson, County, Illinois.

No Agents—"Your idea to sell direct to consumer and cut out agents is a sure winner with careful, cold headed thinkers. I have fared badly in buying from agents."—H. E. Tankey, Rockingham Co., Virginia.

Wonderful Roots—"I have planted trees for 30 years, but never did I obtain a lot that had such perfect root systems with plenty of fibrous rootlets as those I got from you. The care with which you form the tops of your two year trees will certainly recommend them to experienced planters."—Joseph Gerardi, Jerseyville, Ill.

Would Have Gone 10 Times as Far—"I never saw better packing than yours. The bundle would have gone 10 times as far. Have seen lots of nursery stock shipped in here this season with nothing but an old burlap bag around the roots."—Edwin A. Brooks, New Hampshire.

Withstand Drought—"The J. H. Hale trees were planted the 27th of May, when peaches were nearly as large as marbles on the trees. All are alive and looking fine, notwithstanding the greatest drought ever in this section."—H. C. Barrett, Bedford Co., Virginia.

Hardy Stock—"All the trees are in good condition, the growth being an exception in this locality where others set out are practically dead. This condition is due to particular care, but the stock was hardy to start with."—J. F. McDonald, Queen's Co., New York.

Delicious Apple—"The Delicious apples from my trees are as pleasant to the taste as a sweet orange, fully as handsome, and should be in great demand by those who cannot eat an acid apple."—A. D. Van Cleave, Niagara County, New York.

J. H. Hale Peach—"The J. H. Hale is the king of the peach world. We picked as many as 300 peaches off some of the trees—many trees 5 to 7 ft. in height. Fine flavor—large size. Some so big I couldn't get them in a glass jar with a 3/4 inch opening."—F. G. Baker, Los Angeles Co., Cal.

William P. Stark's and J. H. Hale's Experience to Help You

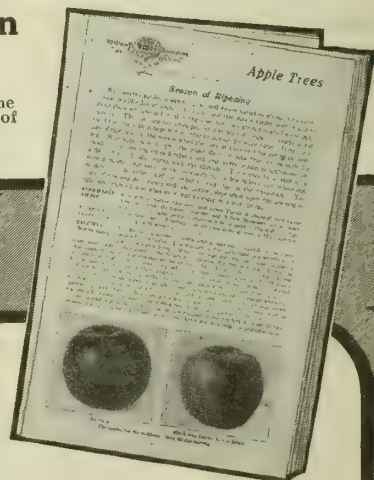
These two men stand foremost in America in their respective spheres as nursery-men and fruit-growers. Think what their counsel and help is worth to you. They have given the best of their practical knowledge and ripened experience in the new 1916 William P. Stark Book. Be sure and write for it today.

William P. Stark Nurseries Box 773, Stark City, Mo.

You can't forget our address. The town is named after our Nurseries.



On account of their greater vigor and larger, heavier root systems, William P. Stark trees, when planted in the orchard, establish themselves more quickly, make a faster, thriftier growth and often come into bearing a year sooner than trees with only average roots.



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Rural Californian combined with California Cultivator

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LOS ANGELES

December 16, 1915

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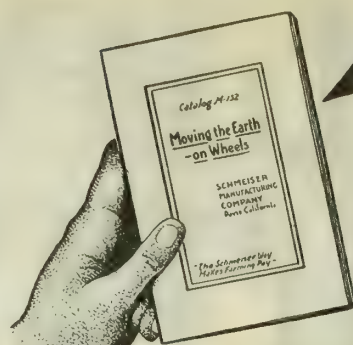
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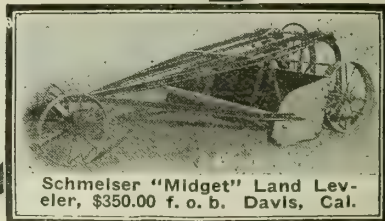
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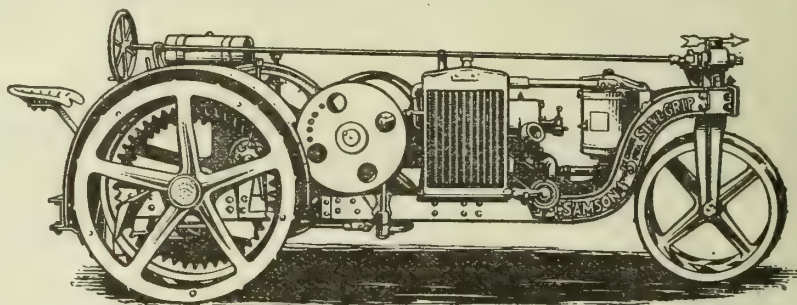
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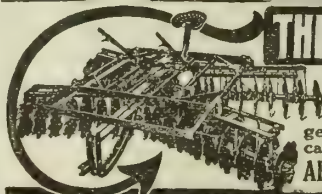
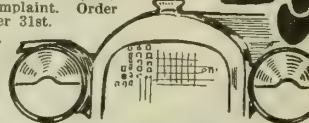
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California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 25

LOS ANGELES: THURSDAY, December 16, 1915

One Dollar Yearly

Horticultural Legislation

Address by George H. Hecke Before State Fruit Growers Convention at Visalia



IN enumerating what seem to me some of the faults of our present horticultural statutes I wish to take my part of the blame in advance, for I have had my opportunities of helping to correct these defects along with the other fruit growers and horticultural officials of the state. I wish to remark that a majority of these enactments are within themselves strong and effective. Their formulation shows high initiative capacity and understanding of conditions. In their relations to each other they are often weak, their lack of uniformity showing the lamentable effects of patchwork legislation.

Take, for example, the acts governing the county horticultural commissions and the state horticultural commission. These acts within themselves are well prepared, yet they fail in coordinating the inspecting and quarantining work. The local quarantining functions of the former have apparently nullified since our last meeting. Some of our best authorities believe that the original county commission law should have contained a comprehensive quarantine clause through which each commissioner could formulate rules subordinate to the clause and coordinate with other county rules under the uniform quarantine authority so delegated. As a matter of fact this law makes no provision whatever for the control of intercounty traffic in articles liable to infect the orchards of the state, although the county commissioner may do something in this line as quarantine guardian through the roundabout provisions of the state law. To obviate this defect the supervisors of almost every county began years ago to enact confusing and possibly unconstitutional ordinances which became the source of justifiable complaint by the nurserymen. These protective measures have possibly been nullified by an amendment of the state horticultural commission act in 1915, and I fear it will be impossible under the latter law as it now stands to substitute effective means of controlling intercounty traffic in articles likely to infect clean districts. In other words local quarantine has been abrogated and apparently no effective authority remains that restores the protection formerly afforded.

Uniformity of inspection is impossible under the later acts relating to horticulture and even the larger execution of these acts is vested in three or four different branches of the service, one of which was not intended to exercise an executive function. The state insecticide act is enforceable by the director of the agricultural experiment station at Berkeley. A fee is charged the individual for analyti-

cal tests, licenses, etc., and all moneys thus originating are payable to the university. The "standard apple act" is directed by the state commissioner, the inspection fees of the former being fixed by that official alone. In the apple law the expenses of inspection are fixed jointly by the commissioner, the board of control and a stamp duty, the proceeds of the latter forming a revolving fund in the hands of the state treasurer.

An act similar in purpose to the apple act is carried out by the county horticultural commissioner in which the expense of the inspection is a charge upon the taxpayers of the county. There is no reason why the apple growers should pay a stamp duty for inspection, while the growers of all other deciduous fruits and grapes and berries enjoy their inspection at the expense of their local community. Neither is there uniformity in limiting the wages of the peach inspector to \$3.50 per day while the apple inspector may be paid \$5. Inspectors under some of our old and new laws are dischargeable at the will of the appointing official; others only by fruit growers' petition; and still others are under civil service rules. Additional inspectors authorized by the standardization law can be employed only by petition on the part of 25 fruit growers. There are many other enactments which might be improved by removing conflicting or irregular methods of procedure.

But it is not my intention to go further into the inconsistencies of our statutes, for I have only a suggestion for better methods of improvements to propose. It is the duty of the fruit growers, this association and all others directly interested in horticulture to find some means of correcting the faults of these laws and to assist in unifying these acts by more comprehensive legislation. As a member of this organization I am interested in the attitude adopted by our legislators in the treatment of these questions, and from later developments in our economic affairs it appears to me these lawmakers intend to perpetuate and strengthen the office of county commissioner of horticulture. The call for a monthly salary instead of a per diem, for better fruit packing, for pure seed and clean plants, for better local quarantine is a call for increased executive authority in the county.

If the attitude of the legislature is a guide, public sentiment is being strengthened in favor of handling these questions through the county unit, the same as other and non-executive work is now conducted through the office of the county farm adviser. The latter office will find room for increasing activities without encroaching upon the executive functions of

the county commissioner and which cannot be legally assumed by the federal or university authorities.

Until the plan to consolidate the various agricultural offices of the state met with failure, I had thought some comprehensive scheme could be devised to unite the inspection and other executive duties of the county horticultural commission with those of the state commission, and so stated at the Los Angeles convention. I quote from the report of that convention as follows: "The (legislative) committee may contemplate the formation of a state department of agriculture for California, grouping such divisions as horticulture, dairying, forestry, etc., as subordinate bureaus under the secretary of agriculture, and only then should an attempt be made to modernize the county horticultural commission."

Since the failure of this plan I see no hope of an early unifying and strengthening of the county quarantine and inspection service or of any other relief through a cooperative movement such as this broader plan would have made possible. This being my conviction from the observations of the past year, that our legislators at this time are indifferent to a general reconstruction of the agricultural executive offices of this state, I have come to the conclusion that the horticultural offices must within themselves and under authority of the fruit growers devise ways and means of reform. However, I believe we should first adopt a uniform method of improvement and abandon all patchwork attempts to interchange and defit the elements that compose the body of our laws; discourage all new legislation that has not been adjusted to the old and made to take its place as necessary and coordinate part of the whole. I speak as only one small part of the force that must be depended upon to do this work, and for one I shall cease to advocate any change in our laws unless it is inspired by a general and well digested plan, supported and urged by fruit growers and their executive officials. By such comprehensive means only can we hope to give future horticultural legislation the force, unity and effect which many of us believe is deficient under the present laws.

But how can this plan of coordination and general effectiveness be brought about? We have seen the failure of past legislation to correlate our statutes and give united effect to our laws, however meritorious each of these laws may be in itself. What better plan of construction can be adopted?

What I now suggest is inspired by the desire to bring about this improvement in some practical way.

A temporary committee should be

selected by the state commissioner of horticulture, the personnel of which should include a member from each well defined interest of horticulture, such as cultural, commercial and official. It would be the duty of this committee to appoint a standing committee whose membership should represent every phase of the horticultural business entitled to a hearing, a majority of which should be bona-fide fruit growers.

Working under a well considered plan, this body of representative citizens should be authorized to take up the whole code of horticultural acts, determine broadly what changes should be made to harmonize the existing statutes, and to recommend for public discussion such new acts as are expedient and coordinate with those already in the collection. In other words, the committee would be empowered to take up every principle now contained in our laws, which have been tested in practice and approved by court decision—to take all this material and have it reconstructed into a concrete whole that would be free from the imperfections of the present laws. This committee should also recommend a broad plan for initiating future enactments that might be found necessary by new or changing conditions. This plan could be adopted, if satisfactory, as the standing policy of the horticultural interests of the state.

This legislative committee should be furnished with financial means for employing a jurist known to be versed in the systematic arrangement of acts embodying a common subject, and able to express the will of his clients in legal and certain phraseology, and should if possible understand the spirit and inspiration that have enabled the fruit growers to protect and conserve their own interests so well in the past by legislative pioneering that with all its faults is yet supreme in that line.

Every step this jurist would take would be under control of the committee and its work would be submitted at last to the fruit growers for approval and the legislators for enactment. I am sure the procedure here suggested would originate a manual for legislative consideration that would command respect and support. It would also clear up all the material defects and inconsistencies of the present statutes.

I commend for your earnest consideration whatever may be of value in these suggestions if any value is found. They are subject to more careful examination than I have given them at this time. Finally, if anyone can present a more workable plan of reconstruction I will cheerfully support it, believing as I do in the ability and determination of our horticultural interests to work out some means for a better code than we now have for the care and promotion of our chief industry.

The Alpha Automatic Power Spray Outfit (Patented)

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The Automatic Pressure Governor Insures Safety, Secures Uniform Pressure and Eliminates Unnecessary Wear. No Relief or Diaphragm Valve Required. Top Guard Rails Fold Up or Can Be Quickly Removed. Gear or Belt Driven. Brass Fitted Throughout.



THE TWO ESSENTIALS in a power sprayer are a thoroughly dependable engine of ample horsepower and a positive and reliable pressure regulator that will insure uniform pressure and eliminate unnecessary wear.

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EXPORTS OF CEDRATS FROM GREECE A NEW MOVEMENT

By Vice Consul C. M. Corafa, Athens



PRESENT conditions have made Piraeus an important shipping center for cedrats which formerly reached consumers through various foreign ports.

The cedrat is a citrus fruit used by orthodox Hebrews at the celebration of the feast of tents, following atonement day, and plays an important part in the ceremonies. Owing to the increasing difficulty with which good specimens are procured, the closing of certain former sources of supply, and the high prices demanded, much attention has been given to the Grecian cedrat.

The tree itself is a variety of the *Citrus medica*, bearing a large fruit, not acid, and having a high and agreeable perfume. The tree is about the same size as the Mandarin orange. The greatest care is necessary for the proper development of the cedrat fruit from the time of blooming to the moment of picking, which takes place about the last of July. After the bud has appeared all surrounding thorns are removed from the branch, even the nearest leaves are removed, and the young fruit is wrapped loosely in flax lint, lest it be marred by a scratch or blemish. For religious purposes it is of the greatest importance that the fruit be perfectly smooth and without excrescence. The stamens are an important part in the sentimental value of the fruit and must be preserved intact. When mature the cedrat is packed carefully in individual compartments of a specially constructed box, each tiny compartment lined with flax lint, in which condition it is ready for the buyer.

Cedrat groves are located on slopes where the winter winds are cut off by protecting peaks and where the temperature does not go too low, for the slightest frost withers the stamens, rendering the fruit no longer suitable for religious purposes, and its value drops to the common quotation ranging between three and five cents apiece, while the perfect fruit retails for from 60 cents to two dollars each.

The use of the cedrat in religious celebrations dates, according to tradition, from a period near the Babylonian captivity, and its use is zealously adhered to by orthodox Hebrews in various parts of the world. Each member of the congregation is supposed to possess on the ceremonial day at least one perfect specimen of the fruit without fleck or blemish and retaining the stamen.

Until the outbreak of the present war Trieste was the greatest cedrat market of this section of the world, but the closing of that port has shifted the market center to Piraeus whence a large export is developing from the increased production which has taken place in the cedrat groves in the districts of Parga and Chimera in northern Epirus, on account of the blockade of the Syrian coast, whence a large amount of the crop was formerly sent to Trieste.

Competent ecclesiastical authorities pronounce the Chimera cedrats

grown in New Greece to be the best in the world for religious purposes, the excellence of which variety is said to be due to a secret process of cultivation which is jealously guarded by its fortunate possessors.

Two shipments of cedrats were made from this district recently, totaling 3,793.99 pounds valued at \$2,480.10, indicating the very high prices brought by this fruit.

* * *

American Trade in Cedrats

The report from the American consulate at Athens on the trade in cedrats in the Levant suggests a new industry for the United States. Quantities of these cedrats are imported. They might be grown in Florida and California. The domestic market would probably not be extensive as the use of cedrats is now confined to one religious denomination, but the industry would be worth while. The chief difficulty is cultural, for the fruit requires most minute attention and must ripen in midsummer (off-season) in time for ceremonial use. However, as the fruit is especially fine for preserving, those ripening at other times could be conserved.

The bureau of foreign and domestic commerce has made an investigation of the cedrat trade in the United States, the following report being from the New York office:

"The question of the importation of cedrats into the United States was taken up with a number of the more prominent Hebrew merchants in New York and persons who were in a position to give the desired information.

"As a result of the interviews with these people, it was ascertained that they agreed that it would be well worth while for American planters to attempt to grow cedrats in the United States. About 50 years ago such an attempt was made to grow cedrats in the United States. The domestic demand for the fruit was very small and most of the fruit was exported to Germany.

"Under normal conditions a cedrat set retails at one dollar and a half to two dollars each. On account of the war there has been a scarcity, and the sets have sold as high as seven or eight dollars. The men interviewed pointed out that if cedrats could be retailed at approximately 50 cents the demand would be enormous, the Hebrew Publishing Company establishing its estimate as high as 200,000.

"There is a small quantity of cedrats grown in California, but they are not nearly as good as those coming from Greece and do not command as high a price.

"Cedrats have been imported from Palestine and from Greece. Those coming from Greece are said to be better than those from Palestine. It takes a number of years before the plant yields a very high class fruit, and this is a comparatively new industry with Palestine.

"It was impossible to ascertain the exact figures as to the amount of cedrats imported which remain in New York. Approximately 65 per cent remains in New York and the balance is sent into other cities of the United States."—Commercial Reports.

INFORMATION WANTED ABOUT THE FEIJOA

I would like to open up a discussion in your columns regarding the feijoa. Will the growers write their opinion of the fruit, their success, etc.

My observation shows in the San Joaquin Valley that fruit cannot be expected before the fourth season from the nursery. The plants bloom profusely but do not necessarily set fruit, even if near others or if water is withheld. Nor do they set better if watered.

In the F. D. Nagle planting at Sultana the size of the fruit varies greatly (of course they are seedlings) but no more than the yield. He gives them the best of care, is observing, and has kept a tree record of his orchard. Also he is successfully grafting over his low producers and poor types.

This is a splendid fruit of delicate flavor when only the pulp is eaten. I well remember, several years ago, being given the fruit with no instructions about eating. I ate out of hand and the taste of the skin destroyed the good qualities of the pulp.

As I see it this fruit cannot become very popular unless large fruiting and regular bearing types are propagated. Steps certainly should be taken to give these to the planters together with best information as to methods used by those whose trees set a good crop. Incidentally let's go a little slower on the production of seedling and unproven stock to sell at novelty prices.

Will other growers contribute their experiences, particularly the successful men?—Walter C. Ficklin, Kerman.

HYDROCYANIC ACID GAS FOR FUMIGATION

The agricultural experiment station of California has issued Circular 139, "The Generation of Hydrocyanic Acid Gas for Fumigation by Portable Machines." It is by Mr. H. D. Young. Illustrations are given of the Owl fumigating machine and the Cyanofumer, with descriptions of each; also tables for charges. Mr. Young writes regarding one or two errors in this circular which he describes as follows:

There has just appeared Circular No. 139 from the University of California, dealing with fumigating machines. The investigations with the portable machines were made before any of these machines were put into actual commercial fumigation operations. Subsequent experience gained from running the machines under regular working conditions has indicated the advisability of a few changes to which attention should be called.

Since the investigations were made upon which Circular No. 139 was printed a slight change in the strength of the cyanide solution has made it necessary to alter the graduation of the pump cylinder so that when the indicator is set at 10, 25 ounces of solution are delivered instead of 24 ounces, containing 10 ounces of solid sodium cyanide. The machine when fully charged contains 1650 ounces of sodium cyanide solution, equivalent to 660 ounces of solid cyanide. To neutralize this amount and to provide sufficient excess of sulphuric acid to complete the chemical reaction and the delivery of hydrocyanic acid gas, 495 ounces of concentrated sulphuric acid are placed in the lower chamber together with 495 fluid ounces of water. It has been found unneces-

sary to use the large excess of acid which was recommended in Circular No. 139, as equally satisfactory results have been obtained with the smaller amount above mentioned.

In some places, notably in Tulare County, some trouble was experienced with a deposit which accumulated in the gas outlet pipe. This occasioned some alarm at first but analysis has shown it to consist almost completely (above 95 per cent) of sodium sulphate. This sodium sulphate is the resultant chemical produced from the reaction of sodium cyanide and sulphuric acid, which under temperature conditions prevailing in Tulare County during the summer months had a tendency to crystallize itself out of solution. This crystallization, should it occur, can in no way cause any loss of gas unless it is allowed to obstruct the outlet pipe sufficiently to increase the pressure within the machine.

The suggested method to prevent the obstructing of the outlet pipe is to fill the discharge hose with water, then raise end to the same level as the outlet pipe within the machine, and allow it to stand during the day. This dissolves out the sodium sulphate and cleans the standpipe completely.

An agent of the department of agriculture has been investigating conditions in Humboldt County, especially as to the appointment for that county of a trained woman worker to take an interest in home economics.

SICILIAN LEMON CROP

By Consul Samuel H. Shang, Palermo

There are two crops of lemons yearly gathered in Sicily, the winter and summer crop, the latter known as "verdelli." The winter crop, gathered from December to May, was a medium one this year and the quality was good. The verdelli crop was also good and above normal in quantity.

Lemons shipped to the United States from January 1 to October 1, 1914, totaled 2,086,004 boxes (300 lemons to the box), while up to October 1, 1915, the amount was only 1,387,547 boxes.

Production has constantly been greater than consumption, and consequently prices have not kept up. Prices in September ranged from nine to 12 lire (at the depreciated rate prevailing about \$1.50 to \$2) per thousand, while in September, 1914, the price was \$3 to \$3.50.

The good weather which prevailed during the late summer and early autumn makes the prospects for the next lemon crop good both as to quality and quantity.

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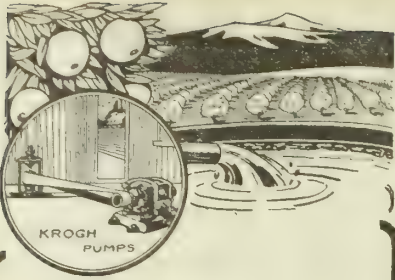
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Fruits

THE CHERRY IN CALIFORNIA

Written for California Cultivator
By Leonard Coates



HERE is a renewed interest in cherry growing in California, owing to the generally good prices obtained and the universal appreciation of the quality of this most popular fruit. And it is, perhaps, literally the most popular of all fruits during its short season, but in California the season for even the cherry is lengthened to fully two months by reason of our wide topographical and climatic variation. For instance, while from Vaca Valley and some parts of the Sierra Nevada foothills we get ripe cherries early in April, the same varieties in Alameda or Santa Cruz Counties would not be ripe before the middle of May, and in Napa or Sonoma Counties between these two dates, and this fruit may be found in the market until July.

The area for the profitable commercial cultivation of the cherry is rather limited, being confined mainly to the valleys in the Coast Range either immediately north or south of the Bay of San Francisco, some portions of the Sacramento Valley, and the eastern foothill country. This implied area is extensive enough, but soil and moisture conditions must also be suitable.

For the best results a deep, sandy loam is required, such as is found along the river and creek bottoms where the largest trees are always to be found. It is an open question, however, whether it is desirable to have the largest trees, the expense of harvesting the crop being increased in proportion. What is essential to cherry culture is applicable to all fruits, though in a less degree, and that is perfect drainage, and the deeper the soil under such a condition so much the larger will the tree grow. Unless the requirements of soil and moisture are present, the cherry tree will fail absolutely while other fruits are not so arbitrary in their needs.

Stocks for the Cherry

What is known as the Mazzard, a cherry growing wild in the Eastern states, is most generally used, not only in California but throughout the United States, as a stock for the sweet or Bigarreau cherries. There are one or two species of wild cherries in Europe which are similar in habit and which are no doubt imported and used very considerably under the name of Mazzard. Another species, a native of Europe, known as Mahaleb, is quite distinct in appearance and in habit of growth, having small, shiny and roundish leaves, the growth of the tree being much more spreading; the wood also is harder. This stock, being of slower habit, will dwarf the trees to some extent. Undoubtedly it is hardier, and more capable of enduring extremes of moisture or aridity and therefore is recommended where the soil and moisture conditions are not congenial for the Mazzard. For this reason again, and because trees on Mahaleb root come into bearing sooner, it is

generally the better stock for cherries for the home orchard or town lot.

Cultivation and Diseases

The cherry tree in California is usually, and preferably, planted at one year old from the bud or graft. Planting directions for any tree are often given, and nearly as often unheeded, but careful attention thereto is none the less imperative. The hole should not be less than two and a half feet deep and the same width. If the subsoil is heavy it is better to blast in the fall while the ground is still dry. If this is done no digging will be necessary, but any "pot-hole" that may be formed must be filled and earth well tamped in. Spread the roots well and firm in the soil very thoroughly. If soil is sandy no harm will result if trees are set a little deeper than they stood in the nursery; neither will it do any good. If soil is heavy and trees are planted too deep they will be stunted, perhaps permanently; in this case a percentage also will fail to grow, and yet there are growers who persist in setting their trees several inches too deep. Perhaps they are right and the tree in error not knowing where to place its roots or its stem.

It is better to leave at least two feet of stem above ground after first pruning and the next year select three shoots, five or six inches apart if possible as a foundation for the future tree and cut them back one half. By so doing there will be less liability to gumming in the crotches. The year after these main limbs will have branched into two or three more to each one. Thin these out and leave six or seven, so divided that the center of the tree is open or goblet-shaped. These may again be cut back, leaving three or four feet of growth to each. Afterwards, merely thin out where growth is too dense and keep laterals well cut back, which will then soon develop fruit spurs.

It is very difficult to prevent buds on a young cherry tree from being broken out. For that reason alone it is always advisable to leave two feet or even three feet after planting. If many of the buds are broken so that there will not be leaves on the main stem to shade it, it will be necessary to use some other method of shading, strips of burlap, loosely wrapped around being the best. The bark of a newly planted cherry tree is very susceptible to changes of temperature, being burned by the rays of the hot sun or affected similarly when the weather turns suddenly cold and frosty in the spring. Apparently, the flow of sap is checked and "gumming" ensues. This gum should be cut out at once or it will increase the affected area. These conditions are worse where soil or atmosphere are not suitable.

What is known as the pear slug, a small, slimy worm which hatches and feeds on the upper surface of pear, cherry and plum leaves, sometimes becomes a serious pest. It is easily controlled by dusting the leaves with a fine, gritty dust, which adheres to the worm or by an arsenate of lead spray which poisons the leaves on which it

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feeds. Gophers are very troublesome in the cherry orchard and must be fought incessantly by means of traps or poisoned bait, or by smoking or the use of carbon bisulphide.

The cherry delights in a uniform degree of moisture during the growing season in both soil and atmosphere, but abhors the dry heat of the interior, although in the river bottoms of the Sacramento Valley it occasionally flourishes. In Southern California the cherry is not a success, the climate being too uniformly warm and dry.

Species and Varieties

The Mazzard cherry has its origin in *Prunus avium*, or bird cherry, a species native to Northwestern Europe. There it often grows to a height of 50 to 60 feet when sheltered by other trees and makes a valuable timber. It is in fact distinguished from other species by its upright habit and large leaves. Cultivated types have been arranged into four groups:

The Mazzards, which yield in some cases fruit which is used for preserves and for flavoring in certain liquors.

The Heart cherries, of which Black Tartarian and Rôckfort are examples, being more or less heart-shaped and soft in texture.

The Bigarreux, heart-shaped, but of firm, solid flesh, like Royal Ann and Bing.

The Dukes, of which May Duke is a familiar example, soft-flesh and slightly acid.

Prunus cerasus is another species, of more spreading and dwarf habit, its cultivated forms being:

Amarells, light-colored sour cherries, such as Early Richmond.

Morellos, dark-colored sour cherries. Seedlings of these are used for stocks for the sweet cherries, giving them a dwarfer habit, but *Prunus mahaleb*, another European species, is more generally used.

The Dukes and Morellos are not cultivated commercially in California as they do not ship well, but a few trees should be found in every home orchard.

The principal commercial varieties of cherry grown in California are Black Tartarian, Royal Ann (or Napoleon Bigarreux), Bing, Chapman, in largest quantities, but very many others of domestic and European origin are grown also.

Marketing

The cherry is the most popular fruit of the retail stores because of its season, when the appetite universally craves fresh fruit, and which, in the cherry is found in its most luscious form. Therefore the local markets dispose of very large quantities, the canners use the bulk of the crop of Royal Anns and the markets in other states as far east as the Atlantic Coast consume many hundreds of carloads of the firm-fleshed, dark-colored varieties mainly, but also a large quantity of Tartarians.

The earlier sorts, while prices rule very high, are shipped quite extensively by express in pony refrigerators, but later they go through in carload lots, all packed in five-pound crates.

Picking and packing the cherry both require expert labor, and no one should attempt either on a large scale until he has worked with experienced hands.

The crying need with the cherry, as with other fruits, is better distribution as well as standardization in the pack. The markets in the East for the cherry are more capable of development and expansion, perhaps, than with any

other fruit. Packed in even two-pound crates or drawers or baskets they would carry better and the largest, finest fruit sells high enough to warrant even this added expense. The outlook for the cherry is bright but it needs more advertising and better distribution.

WHY PLANT BLIGHT RESISTANT PEAR STOCK

Written for California Cultivator
By Claud D. Tribble



FEW years ago pear blight wrought such havoc among the pear growers that 95 per cent of the pear trees in the Sacramento Valley pear districts were destroyed and dug out. Mr. E. A. Gammon of Courtland sought the assistance of the United States department of agriculture and on his place was first demonstrated a partial control of blight by cutting out the affected parts, burning the cuttings and disinfecting the wounds on the trees and also the tools used in cutting out the blight. As a re-

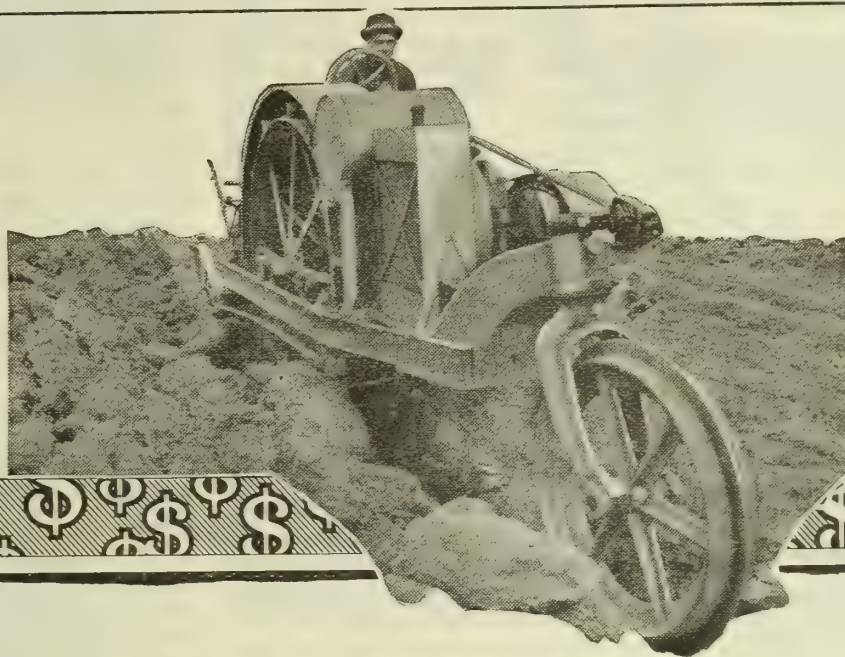
sult Mr. Gammon had a \$40,000 Bartlett pear crop when his neighbors had lost all their trees. The French pear and quince stocks were all that were used at the time and both were very susceptible to blight on branch and root suckers. The French pear throws suckers all through the orchards and although the man looking for blight tries to cut these off as soon as they appear they come up in a clump of weeds unnoticed, are infected by blight which follows the whole root system till the tree is destroyed, and no evidence may be seen till the tree begins to wither and die. It has been demonstrated that the quince is more susceptible to blight than any other root.

In 1912 we sent out letters to a number of the leading pear growers asking their opinion as to the advisability of growing Le Conte and Keiffer cuttings for resistant stocks and also advised that the stocks could not be grown as cheaply as the French pear, and received encouraging replies from every grower to whom we wrote. In replying to our letter Mr. Gammon called our attention to Prof. F. C. Reimer's statement in reference to the *Pyrus sinensis* stock as being "practically blight proof and absolutely sucker proof."

We wrote Prof. Reimer at Talent, Oregon, and we quote the following extracts from his courteous reply: "Under our conditions we can not grow the French pear stock because of its liability to blight. We recommend the *Pyrus sinensis* (Japanese) stock because of its greater freedom from blight and its non-suckering. This stock has given just as good results in growth and productiveness and I understand that where it has been used a great deal longer it has given satisfactory results. This stock is so much freer from blight than the French that there is no comparison."

In our own experiments we grafted some of this stock on some dwarfed pears to note the growth, and in two seasons these trees were as large as the trees that were five years old worked on the French stock.

In conclusion, this stock keeps the blight from entering the ground by suckers and gives the grower the opportunity of fighting the disease above the bud or union. We have perfect success in budding this stock, the growth in the nursery side by side with French stock is larger and more uniform. It is claimed that it is not badly infested by the aphid or root louse but we can not verify this. It will thrive on dry soils where the French stock will not.



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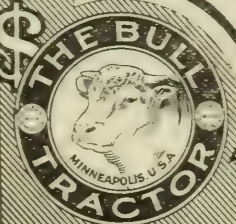
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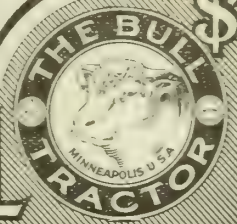
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When the pollen from one variety comes in contact with the stigma of another it sends a tiny rootlet down through the pistil until it reaches the embryo seed. In this way two individualities are united and a new life is generated.

This new life or new variety embraces most of the general characteristics of the two parents in color, form, vigor and countless other characters that make each variety different from any other. Some characters may become more prominent, some may disappear and reappear after several generations. Some may be dropped entirely, and some new characteristics may be developed by the environments of the parents.

Most varieties of gladioli require about three years' growth from the bulb before they reach maturity. For this reason two-year-old bulbs are most valuable. Bulblets usually produce small bulbs that seldom bloom the first season. These bulbs nearly all bloom and produce a large number of bulblets the second year, but the blooms are not so large or numerous as they will be the following season when they are usually at their best, or, we might say, in their prime of life. Some varieties will continue vigorous for only two or three years after maturity, and others for a longer length of time. Much also depends on the environment and the treatment that the bulb receives from the grower, so that no exact age can be set at which a bulb becomes worthless.

We have certain lots of bulbs that we have been planting in our test plots for about ten years, each spring planting the bulbs that grew on top of the old bulbs the previous season. Some that were old decrepit bulbs when we got them are all dead and gone. One lot has never produced a bulblet that we have seen, and but few flower spikes during the last six years, but it has increased from a dozen bulbs to about a hundred. What are they worth when they will not produce flowers? When a gladiolus bulb dies, it usually fails to sprout and rots in the ground, but we sometimes find bulbs at digging time still sound that did not have vigor enough to sprout. As an experiment we have planted some of these the following season and they invariably rotted in the ground.

Some think they have ample proof that gladioli will change color because they miss some varieties after growing them a few years. The fact is that some of the varieties lacking vigor die and rot in the ground while the more vigorous ones will increase by division so that the dead ones are not missed.

A bulb five or six years old will produce but few bulblets. As an illustration, I quote from one of my previous writings on this subject: "A gladiolus bulb will reproduce itself and

bulblets freely for a few years but the production of bulblets and the vigor of the old bulb will gradually diminish as does the production of eggs by the old hen. The bulb may bloom and the old hen may show her gaudy feathers for a few years longer but they are both nearing the end of the journey from which no traveler returns."—G. D. Black in Modern Gladiolus Grower.

PREVENTING DEATH OF CLEMATIS PLANTS

The sudden dying of clematis plants, especially wherever the large-flowered kinds are grown extensively in America and Europe, has been noted for many years.

The disease shows itself differently on various species, says W. O. Gloyer of the New York agricultural experiment station. On hybrids grown in the field it is a stem-rot, while at the greenhouse where cuttings are propagated it is a leaf-spot as well as a stem-rot. On the clematis paniculata the disease takes both forms.

The following methods for controlling this fungus are recommended:

There is less disease when the hybrids are supported while growing than when they are permitted to trail on the ground. In the case of the clematis paniculata, however, the selling price of this variety does not warrant incurring the expense of supports. The author in this case advises transplanting the plants from the beds to the open field after the first year and placing them far enough apart to prevent matting, which is always a condition favorable to the disease. The following spray applied lightly controls the disease on clematis paniculata growing in the beds and on cuttings in the greenhouse: One pound of laundry soap and six pounds of sulphur to 15 gallons of water. The disease can be controlled on the hybrids in the forcing frames or in the greenhouse by the use of sprays. In all cases it is best to remove the diseased leaves and dead vines before spraying. It is particularly important to clear out such leaves and vines, especially if the plant is wintering outdoors, as the fungus is able to survive cold weather. This indicates also that the same beds should not be used for clematis during successive years.

The retail purchaser of clematis can prevent the dying of plants by taking simple precautions. The plants should be placed in good soil, well drained and on a sunny exposure. As soon as the new shoots have formed the old vine tissue should be carefully cut away close to the new shoots, removing all traces of the brown, discolored wood in which the fungus is to be found. Proper ventilation is obtained by training the plants to a strong trellis.

County and state fairs are fast getting away from the idea that large-sized vegetables or fruits should be awarded prizes. Quality, evenness, appearance and use are the factors that should influence premium awards.

Zinnias are coming more and more into use. The improved sorts are excellent in beds, and many of them make good bouquet material.

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FIELD NOTES

Written for California Cultivator
By C. A. Briggs

A Long Step Forward

Eight years ago J. W. Benoit, a young farmer of Modesto, started to build up a registered Holstein herd. He had five old cows and \$750 in money. Was that all his capital? No! he had youth, courage and a knowledge of what constituted a good dairy animal. Besides this he was a worker. Today on his farm of 40 acres he has 47 head of all ages of which 43 are milking—all of the fin-

Elmer Lamb of Ceres reports recent sales from his Rancho Rubins herd of Duroc-Jersey swine as follows: Boar and bred gilt to F. A. Haroux, Applegate; boar to J. L. Dickenson, Visalia; boar to W. T. Sesnon Bradley; gilt to N. S. Boone, Haywards; gilt to J. M. Henderson, Sacramento; boar and four gilts to John B. R. Cooper, Monterey.

R. E. Watson, Rancho Dos Rios, Modesto, has recently sold to D. O. Schuman of La Vega Ranch, Artesia, a registered Jersey bull and two registered heifers for foundation stock.



Elect E., Property of J. W. Benoit, Modesto.

est type, blood and breeding, registered Holsteins. His herd sire, El Prado Colantha, is a splendid individual whose dam, Edith Mandell Wayne, has a seven-day record of 30.9 pounds of butter and 484.7 pounds of milk. His sire, Colantha Sir Pontiac, has proven his worth as transmitter through the records of many daughters. The well filled barns and great stacks of alfalfa and the sleek black and white cows all show success and point to a greater success. It has

POTATOES AS HOG FEED

Because of the surplus of white or Irish potatoes now on the market and the consequent low prices, many farmers have been seeking information as to the possibility of feeding them to hogs.

Many experiments have been conducted in Germany and other foreign countries as well as a few in the United States to determine the value of potatoes as feed for swine. In Ireland and Germany farmers feed large

vantage when cooked or steamed and mixed with other feeds. Experiments in which raw potatoes were fed alone have been reported. In certain instances the raw potatoes are said to have caused scours. However, raw potatoes in small quantities and in a diet lacking succulence may be conducive to health in pigs.

In cooking potatoes only enough water should be used to make a mealy mash and prevent burning. The resultant meal should then be mixed with corn meal or other grain supplement. Tankage, skim milk, or meat meal would probably add to the profit

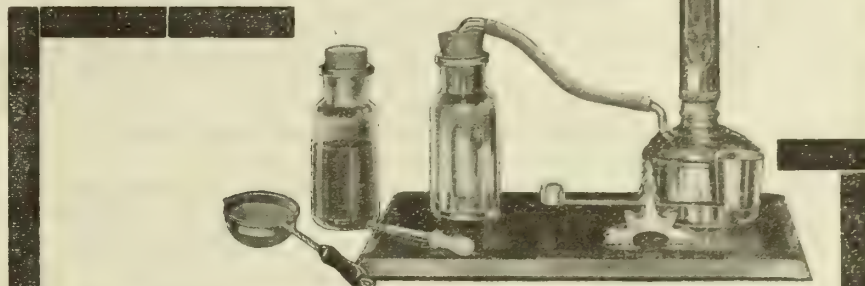
of the mixture. Potatoes when prepared in the manner described and under the conditions mentioned can often be fed to pigs with advantage.

The silo makes it possible to raise more feed and to keep more cows on the same acreage and substitutes certainty for uncertainty in the management of the herd to an extent impossible in any other way.

The silo should be smooth on the inside and perpendicular from top to bottom. Uneven walls prevent the silage from settling evenly, all air is not excluded and spoiled silage is certain.

THE STANDARD SOIL TESTER

AT YOUR SERVICE

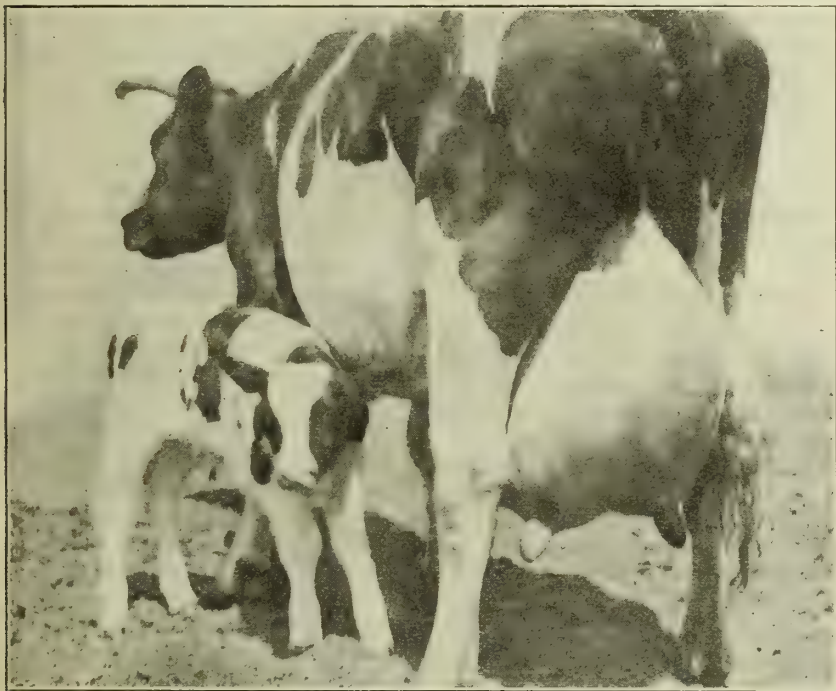


It Will Show You Accurately:

1. Whether a soil is in the right chemical and physical condition.
2. Whether a soil is slightly, moderately or extremely acid.
3. How much Lime is needed per acre to counteract the acidity.
4. What quantity of Carbonates (Lime and Magnesia) a soil contains. It will indicate quantities, both in "percentage", and "in tons per plowed acre." From this you will see whether
5. Whether disclosure of Carbonates is Alkali or Lime.
6. Whether a soil is lacking in Humus. It will show you whether a soil contains 1 per cent or more, 1/2 per cent, or none.
7. Whether a soil is in need of a green manure crop.
8. It will demonstrate the probability as to whether a soil will respond to applications of chemical fertilizers or not.

Standard Soil Tester Co.

Pacific Coast Branch and Laboratory
601 Central Mortgage Bldg. San Diego, Cal.
Clement B. Stern, Manager
Pacific Coast Branch
M. O. Reiche, Dr. Ph., Dr. Sc.
General Mgr. and Chemist, Milwaukee, Wis.



Damisela, Owned By J. W. Benoit, Modesto.

been said that any success is but the shadow of the man that created it, and surely this farm and herd speak in no uncertain tones of the determined effort of its owner. Another lesson to be gained from what he has done is the results that are possible for other young men in the same line of work. The dairy industry of California has room for many such.

Recent Sales

J. K. Fraser of Denair, breeder of Duroc-Jersey swine and Holstein cattle, reports sales as follows: to Dr. Dixon, Hanford, bred sow; to Mrs. J. W. Bihne, Phoenix, Arizona, Holstein heifer.

quantities of potatoes annually. From experimental data it has been concluded that four to four and one-half bushels of potatoes when cooked are equal to about one bushel of corn for putting gains on hogs. Therefore, if corn is worth 80 cents a bushel, potatoes when fed to hogs would be worth only 18 to 20 cents a bushel. There may, however, be instances where it would be more advantageous for the farmer to feed to hogs right on his own place at least part of his crop rather than to haul these potatoes to an already overloaded market.

According to the consensus of opinion potatoes are fed to the best ad-



LAYNE & BOWLER PUMPS

Ranchers! Prepare
now to raise bumper crops in 1916 by installing your new pumping plant. Write today for our Booklet No. 30, which describes in detail Layne & Bowler Pumps. Sent free upon request.

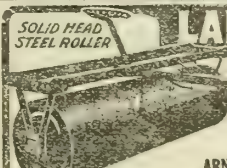
Our FREE Advisory Service
We will be glad to have you consult our engineering department at any time regarding any irrigation problems that you may have. We have data on file pertaining to water conditions all over the Southwest and will be glad to place it at your disposal. Remember—this service is free and places you under no obligation whatever. "Let the world's largest water developers solve your pumping problems."

Layne & Bowler Corporation

900 Santa Fe Ave.
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Our Land Rollers are full weight, well finished and we have all sizes and styles; also Pulverizers and Clod Crushers. Quick shipment from Los Angeles stock. Order through your dealer or direct. Accept only the genuine with our name and guarantee. Call personally or write for catalogue.

ARNOTT & CO., Inc., 112-18 S. Los Angeles St., Los Angeles



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Opinions on shotgun powders vary. But no matter what your individual ideas may be you'll have no difficulty in matching them with one of the

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Shotgun Powders.

Infallible. This is a dense smokeless powder that gives high velocity, even patterns and light recoil. It is waterproof, weather-proof and age-proof, and therefore retains its uniformly high quality at all times.

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E. C. This powder is always uniform in quality. It is easy on the shoulder and gives a pattern that the bird can't "get through."

And, finally, the man who swears by good old-fashioned black powder will find his ideal in

L. & R. Orange Extra.

Since 1808 this has been the standard black powder for shotguns and rifles. It represents over a hundred years' experience plus improved Hercules methods of manufacture.

Two interesting books are yours for the asking. Write today for *Trapshooting*, for beginners and veterans, and *Hercules Sporting Powders*, for every owner of a rifle, shotgun or revolver.

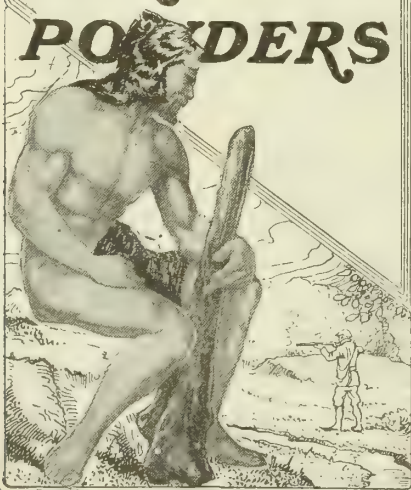


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Chronicle Building,
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The Grand Prize for Smokeless Shotgun Powder at the Panama-Pacific Exposition was awarded the Hercules Powder Company.

HERCULES POWDERS



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F. H. BAUME, Ag. & In. Agt., N. & W. Ry.
397 N. & W. Bldg. ROANOKE, VA.



General Agriculture



ABOUT HARD SPOTS

Written for California Cultivator
By Sacramento Valley Contributor



HERE is a story of an incident in California development that will be of interest:

In many districts in the state the soil is heavy; that is, it is made up of a comparatively large percent of silt and clay. It is difficult to plow when too dry and it "runs together" and forms big, hard lumps when too wet. In order to secure the mellow, easily worked seed bed that is consistent with good farming it is necessary to plow and disk and harrow when the soil contains just the right moisture content, not too wet nor too dry.

It is believed that these heavy soils have been formed by the washing down of the hills into the valleys, the heavier particles have settled first, these fine grains of silt and clay being held longer in suspension and making up the soils at the lower levels. Because they are made of these fine silt and clay particles they are the richest and most enduring and when properly handled the most productive of all soils.

But when they are developed under some intensive cultivation system it is frequently found that there are hard spots that do not grow as satisfactory crops at first as the balance of the field. These may have been formed in low pools where the water stood longer and the very finest particles settled during the period when the land was in the process of formation.

In one district in the great interior valley a man bought a piece of irrigated land, made good ditches on it, leveled it carefully, made a good seed bed, sowed alfalfa and secured a good stand.

He clipped it two or three times as it became high enough to strengthen the root growth, then let it come on to make the first crop.

He was very much disappointed to find that there were certain spots where the alfalfa did not grow so well as on the rest of the field, and on investigation he found them harder and the soil containing less moisture than in the places where the better alfalfa was growing. He hoped that this condition would disappear after the next irrigation but was more than ever disappointed when he found the condition even worse. The alfalfa on the spots was even shorter, in comparison with that on the rest of the field, than before.

Very thoroughly worried now and convinced that he had bought a poor piece of land he took a shovel and started to find out anything he could about the conditions in the spots, fearing that there might be a bed of alkali close to the surface.

He found that the soil was very hard, and six inches below the surface, very dry. The irrigation water had passed over the soil but had not penetrated deeply, as it did in the remainder of the field.

During the rest of the first year the crop on the hard spots amounted to practically nothing. The roots were

forced to feed in the few inches into which the moisture penetrated at each irrigation, and this meager root growth made possible a very limited development of that part of the plant above the ground.

The next season there was a somewhat better growth on the spots, the first crop, less the second, and almost none after that except on a couple where he had put some lime and manure as an experiment. These held the moisture, permitting greater root penetration and consequently more top development.

Without the mulch made by the manure and the mellowing effect of the lime the untreated spots dried out, and after the moisture left by the winter rains (which had penetrated deeply) was dried out, it was not possible by passing the water over the land as in ordinary irrigation, to get it into the soil again. And letting it stand on the soil would not accomplish it either. If the spots had been cultivated up—deep furrows run close together through them—and a small stream allowed to trickle through for several days, it could have been done, but with the flooding system as the land was prepared for irrigation this was not possible.

Incidentally it was also found that by irrigating the alfalfa twice to each cutting—and not allowing any of the soil to become too dry between irrigations—better results were secured.

Now all of the hard spots are to be covered with manure and lime is to be applied to them at the rate of two tons per acre. In two more years it is expected that they will all have disappeared, as the treated spots now have.

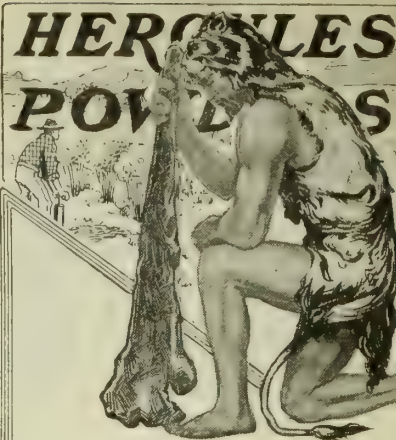
Everywhere that farming is done there are problems—they are no more difficult here than anywhere else.

MANUAL OF SOIL PHYSICS

A "Manual of Soil Physics" by Percy B. Parker, M.A., Professor of Agronomy of the University of Nebraska, published by Ginn & Company, Boston, at 65 cents.

The growing need for a complete set of exercises for laboratory work in soils, suitable for institutions that have introduced agriculture into the curriculum, has been very noticeable. The "Manual of Soil Physics" has been prepared to meet this growing demand and to enable instructors to offer a more thorough study of the soil. The subject matter of the exercises has been confined almost entirely to soil physics, but a few exercises are included to emphasize other important subjects of soil study. The exercises give the student an understanding of the origin of the soil; soil water, its movements, use, and conservation; soil heat; the texture and structure of the soil; organic matter, its effect upon the physical condition of the soil and its influence upon productivity. The study includes exercises that instruct in some of the more simple and practical methods of soil examination.

The covers indicate a good sized book, and the best part of it is it is to be made by the student. There are only about 100 pages of instruction, or rather suggestions of work to be done, with some questions. Practical experimentation, with records of same, makes up the balance of the book. Leaves are added or removed as needed.



Blast Holes Now For Thriftier Trees

BLAST the holes and blast them now for trees you intend to plant next Spring. Leave the subsoil exposed to the air, frost and moisture all winter. The weathering will settle and mellow the earth, and the compact subsoil will be disintegrated.

You can easily, quickly and inexpensively do this work with

HERCULES DYNAMITE

Trees planted in Hercules blasted holes have longer and stronger roots than those planted in spade-dug holes. Their development is more vigorous and rapid and they bear earlier. The reason for this is that Hercules Dynamite loosens the soil for several yards around and below the hole and as a result the roots have more open material through which to expand.

Progressive farmers and orchardists are using Hercules Dynamite not only in tree-planting, but also in orchard rejuvenation, sub-soiling, rock and stump blasting, draining, ditching, excavating, etc. These and other time-saving, labor-saving and money-saving uses are clearly explained in our

Interesting Free Book

Every farmer and orchardist should read *Progressive Cultivation*. To every reader of this magazine we offer a copy of this valuable book without cost or obligation. Write for your copy today.

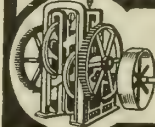


HERCULES POWDER CO.

Chronicle Building,
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Note: The Hercules Powder Company has been awarded a Medal of Honor by the Department of Mines and Metallurgy, Panama-Pacific Exposition, for High Explosives, Hercules Gelatins and Dynamites.

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3 irrigation booklets free. Install this famous pump. Eliminate trouble. Cheaper water. Perfect service. Luitwelier Pump, Eng. Co., 707 N. Main, Los Angeles.

Economics

on the Farm

STATE COMMISSION MARKET

By William E. Brown



THIS is a brief outline of some impressions in relation to the state commission market. My conclusions are largely based upon testimony given at the hearings conducted by the rural credits commission and upon first-hand information given me by several market experts now actively engaged in handling California products.

My idea of making a start with the state commission market is embodied in the following recommendations:

As a working premise it must always be borne in mind that the Brown-McPherson state market act is a California law, designed primarily to accomplish the greatest good to the greatest number in the state of California.

Operations should begin at the point of greatest necessity. To illustrate: There are said to be about 15,000 growers of citrus fruits in the state, while of the smaller farmers producing varied crops there are approximately 100,000. It is further estimated that this class is feeding about 2,000,000 consumers. The first named class, the citrus growers generally, have means and have their own sales organization, while the latter class is unorganized and in many instances individuals facing financial disaster through archaic market conditions, while the consumers they are feeding are paying too much for living, due to the same market inadequacy. Manifestly then if we are to bring the greatest good to the greatest number of our people, here is the point to begin, i.e., to shorten the avenue between the 100,000 small farmers and the 2,000,000 consumers to the end that the former may receive a just recompense for their labor and that the latter may pay a reasonable rate for cost of living. The larger industries, such as the citrus, nut, raisin, etc., have their lines fairly well laid, and as a whole are not asking for aid. Furthermore, the number of individuals engaged in these activities is relatively small compared with the many thousands of smaller farmers. The purpose of the state market act is that of all beneficent laws, namely, to benefit individuals first, and if this is intelligently accomplished, genuinely successful industries will be established.

It will be well to bear in mind that in the beginning the volume of business done is not a vital matter. The mere fact that the market director is on the map, so to speak, with a workable plan, establishing standards of quality and price, will begin at once to improve the entire situation, just exactly as the state going into the insurance business regulated and modified insurance rates.

In order to accomplish the much desired results briefly outlined in the preceding paragraphs, the following tentative outline of a plan is offered for consideration:

Establish an experimental production and consumption zone, say, in the city of Los Angeles, whose immediate surrounding farming country raises practically everything necessary to sustain life and whose good roads and transportation lines radiate

in every direction. Rent a warehouse for a central receiving and distributing point.

Establish rules and regulations as to standardization, quality, packing, shipping, etc., and invite all producers within the zone who are willing to comply with said regulations to consign their products to the state commission market.

Encourage the producers in the various localities to form cooperative organizations for the purpose of assembling produce and packing and shipping it in compliance with the regulations issued by the market director.

When the market director is assured of proper quantities of varied products, opportunity should be extended to the various retail dealers throughout the city to use their stores as avenues to the consumers, with the express understanding that they be permitted to make a fair rate of profit (say 25 per cent) and no more. In the event of their not complying with this arrangement, then the privilege of buying "State Label" goods is abrogated, and the loss of a privilege it will be, for the "State Label" will speedily become a synonym of best quality, honest pack, right priced goods.

To safeguard the consumer and prevent the retailer from asking exorbitant prices that will restrict output, adopt the method pursued by the Raisin Growers' Association, i.e., keep the consumer posted as to the approximate price he should pay the retailer. This might be accomplished by a bulletin in the daily papers, just as market quotations are now published.

The following incident well illustrates the evils which the Brown-McPherson state market act is designed to correct: A farmer in one of the northern towns of the state brought some lemons to market, for which a retailer paid him eight and a quarter cents per dozen. The dealer put a price upon the fruit of 45 cents per dozen and then wondered why they didn't move. It will be noted that the dealer boosted the price more than 500 per cent.

The reason that cooperative selling organizations are powerless to meet the situation is that their influence does not extend far enough. While in a measure they protect the producer from exploitation by the jobber, they do not control the situation between the jobber, retailer and consumer. Only the state can do this. Statistics show that in some instances the price between the jobber and consumer is advanced as high as 400 per cent. This multiplies the consumer, immensely restricts outlet and causes consequent rotting in the fields and orchards of thousands of tons of fruits and vegetables. In other words, cooperative selling organizations are primarily concerned only with the producer's welfare, while the state commission market is in position to benefit all of the people, consumers as well as producers.

Boiled down, the situation resolves itself into a very simple economic question. Here is the producer and there is the consumer. Now establish the most direct avenues between the two classes, eliminating as far as possible all duplication of effort and expense. Under our present outgrown and wasteful method of marketing the products of the soil, the farmer gets only about 27 cents or the consumer's dollar and the balance of 73 cents is absorbed somewhere en route. I am told that in Europe, where scientific marketing has been worked out, the farmer gets the largest share of the dollar, and this is manifestly just.

I believe that the state market act is one of the most important laws ever enacted in the state of California. It embodies the possibility of benefiting every man, woman and child in the state. Its purpose is to

make living easier for those who are struggling with adversity, those who are struggling to lift a mortgage from the home, those who are striving to provide a decent living for their families and to earn a little more than the mere cost of living so that they may educate their children.

If we are enabled to create even a modicum of the benefits herein outlined this act will have rendered a most valuable service to the state in making possible a more substantial and satisfied class of citizenship, and after all this is the true mission of law.

NOTE: Even after its experience of nearly a century, Case is not content to publish advertisements unless based on the very latest authoritative information. This is one of a series of messages to farmers, prepared after visiting tractor demonstrations, talking to hundreds of farmers, and carrying on a national investigation through our sales organization and by mail to find the gas tractor needs of the farmers.

A Tractor

Not Too Small
Not Too Light
Not Too Cheap

Whichever size of Case Tractors is suitable for your farms, you can bank on its being the best of its kind in the market, made honestly and conscientiously, to uphold our name and fame. In the field and in our laboratories we have carried on tests and we know from experience what is best to incorporate in a tractor. In its class, each Case Tractor is a masterpiece, embodying all the best features. Why be satisfied, then, with lesser quality? Why choose as your investment a tractor that has fewer years of experience behind it? Case has been in business 74 years. You would not buy an experimental automobile. Then why a tractor except from a company long engaged in making agricultural machinery? To do otherwise is to take an unnecessary risk.

More Economical Than Cheaper Tractors

You want a real, everyday tractor, one that is backed by a reputation. We say that a Case tractor costs less than cheaper tractors because it is built honestly and carefully. Case principles are right, and no



From an Actual Photograph of a Case 10-20

Case tractor is too small, too light or too cheap. Case tractors are built to uphold a name and fame that must not be dimmed, so they will not be claimed by tractor graveyards. The wise farmer who chooses a Case is bound to increase his farm profits. He need never experiment with one tractor and then another. He need never fear that he will be caught with an orphaned tractor on his hands.

"Horse Poor"

Too many farmers are unable to put their farms on a profitable basis. Too many farms are over-horsed, but under-powered. A farm must be put on an earning basis like other businesses. Case Tractors reduce the cost for horses and men.

Case Leads



The Sign of Mechanical Excellence the World Over

The Case Tractors are made in the Case Shops by Case workmen. This includes our specially designed tractor motors. Because of our reputation, you can depend on our engine delivering the power. It is simple, efficient, economical, constant. At all the tractor demonstrations this year, the Case Tractors commanded the attention of thinking, studious farmers, who were planning to do away with costly methods and claim the profits that rightfully belong to them. Men admired Case simplicity, and contrasted our experienced engineering methods with the many types recently introduced. Some men expected to find Case tractors suitable only for large farms, but were pleasantly surprised to find our line included all sizes, suitable for all farms. Case gas tractors are in four sizes—the 10-20, 12-25, 20-40 and 30-60.

J. I. Case Threshing Machine Co., Inc.

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Founded 1842

Leaders in Other Lines of Agricultural Machinery

Case steam engines, Case threshing machines, Case road machinery, Case automobiles, and every Case product is each a dominant factor in its own field. Write today for our complete Case Catalog. It is an album of information that should be under the reading lamp in every farm sitting room. It is beautifully printed, with many interesting scenes and reproductions in color. No farmer should miss having it. Especially when it costs you only one penny for a postal card to get it. Merely write, "Send me your general machinery catalog."

SEND TO DAY For the CASE Catalog Your Name on a Postal Will Do

GRAIN DRILL



BUCKEYE DRILLS

ALFALFA DRILL



This old reliable line of drills is used and known everywhere. Single or double disc, grain or alfalfa, or combination. 5 to 12 feet wide. Don't buy an imitation, said to be "just as good." Call and look them over or write today for catalogue and name of nearest agent.

ARNOTT & COMPANY, Inc., 112-118 South Los Angeles St. Los Angeles

Agricultural Implements



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Locate in the State second in wealth in the South. Delightful climate, no extremes of heat or cold. Average rainfall 45 inches. Most counties have State Agricultural Agents. Land values will increase. Boys' corn clubs. Girls' canning clubs. Good schools, churches, roads, railroad facilities. Nearby markets. General farming, poultry, dairying, fruit and stock. Farms \$15 per acre up. Write for beautiful magazine, official lists, maps and other information, free.

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Established 1888. Twenty-seventh Year.

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California CultivatorA Journal of Horticulture and
Agriculture

By

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loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
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Cultivator when writing the advertiser.**CHRISTMAS SUGGESTION**

A subscriber has suggested
that instead of buying objects of art
and inutility for Christmas presents
we choose those things which will be
far more acceptable and pack boxes
of wholesome California nuts, raisins
and dried fruits of all kinds. Noth-
ing could be more attractive.

DAIRYING, SIDE LINE

There are many orchardists in
California who not only buy their
vegetables, but their butter and eggs.
Such specialization is not wise, for
more than once has it led to disaster
if not real suffering. When the one
crop does well, all goes well, but
there are occasions where all is not
going well and where the greatest
profit is not secured by the specializ-
ing process. The cow or two cows
and a good sized bunch of hens not
only saves some of the orchard waste
but returns fertility. We believe that
dairying as a side line in the orchard
will increase. To the orchardist who
has spent most of his life in an office
or following some profession dairying
does not appear so attractive as
orchard work, especially as much of
the work is hired, but we believe that
California's greatest success will
come only when we diversify more.

FINE RAINS

Now comes another fine rain
insuring feed and a coat of green over
all the hills. The first general rain of
nearly two weeks ago was followed by
another coast rain. The two storms
aggregated from one to four or five
inches precipitation in various parts
of the state. The early November
rain was a freak storm coming up
the coast from Mexico. It gave a pre-
cipitation of an inch or more in near-

ly all Southern California sections,
dwindling out till it gave practically
nothing at San Francisco and north
of there. The last two storms insure
the starting of all tree planting and
farming operations and we trust will
reassure many who were beginning to
fear drouth. Such pastures as were
started by the earlier rains will now
make fine growth. Orange growers
have at times been somewhat con-
cerned over the temperature, but no
damage whatever has been done as
yet though the thermometer has
fallen so far in some places that some
smudge pots have been lighted.

But referring to rain, let us sug-
gest; irrigate, and then irrigate some
more. An abundance of water in the
lower depths means success through

compete with them in the manufac-
ture of these by-products. American
ingenuity, however, may be sufficient
to overcome this and produce as
economically as in the Mediterranean
countries. The department of agricul-
ture, as well as the Exchange, has
been making investigations along
this line of conservation which we
believe will add much to the wealth
of our producers.

In this connection we might refer
to the fact that the commerce reports
issued by the department of the in-
terior note that a brewery which was
put out of business at Salem, Oregon,
has been reconstructed and is now
used for putting up loganberry juice.

RURAL CREDIT

When we speak of rural credit
there comes a vision of some great

EVER THINK WHAT ADVERTISING IS?

ELL, good advertising (and that is the only kind you find in the
California Cultivator) means the telling of a story. We read
papers and magazines only to get the pleasure and educational
benefit to be derived from the world's events; stories of travel,
progress, war and catastrophes, stories political, social and
religious, but our editorial pages give little or no information relative to
the mercantile side of life.

Little space can be devoted to the achievements of men who labor
and invent for our comfort at home; hence, the manufacturer must tell
his story by means of paid advertisements in the papers, which accounts
for many of the great conveniences you now enjoy having been first
brought to your attention by this method.

Now think, there is truth in that, and it is this very truth that makes
possible the papers you read today, because without this advertising pat-
ronage or carrying of mercantile stories for profit no farm paper pub-
lisher could afford to give you the paper he does.

It is necessary that you realize this in order that you may appreciate
the advisability of doing what you can to promote this industry of adver-
tising. Spend your money with the people who help to support your
favorite paper, and by so doing you will be a benefit to us all. It is
really your duty as a good friend.

There are many little business stories in this issue of the California
Cultivator, all told by thoroughly reliable people, most of whom are per-
sonally known to us. You can learn something to your advantage by
glancing through our advertising columns. Let us know if you ever
have the slightest cause for complaint. See our guarantee on editorial
page.

next summer. Water once deeply in
the soil will stay there for months if
the surface is kept cultivated. Again
we say; irrigate.

SAVING THE WASTES

The price of lemon oil has been
advanced something like 1000 per
cent. Of course "It's the war". For
our supply of many commodities all
the way from dyestuffs down to lemon
oil and a lot of other things which
Americans have it in their power to
produce we have found during the past
few months that we are dependent
upon other nations. Worse, we are
finding that we are a most wasteful
nation and many things which might
be turned into good money for the
producers are thrown away.

Some of these wastes are now
being saved by plants installed by
private capital and by the California
Fruit Growers' Exchange. These will
utilize hundreds of tons of low-grade
lemons, which at present are either
entirely wasted or worse than wasted
by being sent to the market where
they not only fail to secure enough
return to pay expenses but batter
down prices so that even the best
fruits bring poor returns. From
lemons may be made essential oils,
extracts, citrate of lime, marmalades,
jellies, any number of attractive and
salable products. The trouble has
been that American labor has not
been content to work for the wages
of the European, hence we cannot

movement organized and backed by
the federal government, which aims to
secure to the farmer a lower rate of
interest on money used to increase the
output of his farm. This item does
not have to do with that kind of
rural credit; it is inspired by a remark
recently heard from a banker in
answer to the question, "Why is it
that as a rule the farmer has to pay
a higher rate of interest than the man-
ufacturer?" After denying that, secu-
rity and other things being equal,
the farmer did pay a higher rate of
interest, he said, "You must bear in
mind that the farmer, especially of the
old-time type, often has indifferent
credit to offer, and is indifferent as to
when he meets interest and payments."
In other words, this banker would con-
vey the idea that as a class the farmer
is dilatory in paying accounts. We do
not know whether it is safe to deny
this in toto or to grant that a little
bit of it at least is true. But whether
one is farmer, merchant or manufac-
turer, there is no surer way of main-
taining credit than by prompt pay-
ments. It is conceded that the mer-
chant may be better able to judge of
future transactions than is the farmer,
for the latter has to deal with so many
unforeseen conditions of weather as
well as more uncertain conditions of
market affecting crops. This may ex-
plain why the farmer as a class can-
not be as prompt and as certain in his
payments. But if he is to have credit
under right conditions, neither govern-
ment rural credit schemes nor any-
thing else can secure it for him unless
he so plans as to make prompt pay-
ments.

Agricultural Notes

The Southern Atlantic states im-
port one-fifth of the hay they use.
According to the most recent figures
of the United States department of
agriculture, 1,305,000 tons of hay,
valued at \$17,626,000, are brought
each year into the 11 Southern states.

Government control of the jute mills
in India is announced in dispatches
from Calcutta. Sales of burlap to
private buyers will be contingent on
government permission. This restric-
tion had already been ordered at Dun-
dee, Scotland, the center of British
jute manufacture.

The potash shortage has directed at-
tention to the seaweeds of the Sara-
gossa Sea in the Central Atlantic.
Vast amounts of this weed are thrown
on the coasts of the Bahamas. Experi-
ments show the dried kelp to contain
on an average nine per cent of potash.
The dried kelp of the California coast
has a much higher per cent of potash,

Hawaiian soil is being used to build
up the small coral island in the Pa-
cific known as Midway and used as a
relay station by the Commercial Pa-
cific Cable Company. A quantity is
taken there every three months by
the schooner that is sent with food
supplies for the operators. The task
of building the island has progressed
so far that it is possible to keep a
cow on the pasture.

Our consul at Ottawa reports that
evidence of greatly improved indus-
trial and commercial conditions in
Canada is steadily accumulating, the
splendid agricultural crops being
largely responsible. In some instances
they are more than double those of
the previous year. It has been officially
announced that a domestic Dominion
loan of probably \$50,000,000 will be
offered for popular subscription about
the end of the present month.

Considerable attention is now being
given throughout Canada to a so-
called daylight-saving scheme. The
movement in Halifax is in accord
with an effort all over the Dominion
to have the clock put back one hour
on April 1 each year, continuing to
some autumn month, in order to give
more daylight for work and pleasure.
Meetings are now being held all over
Canada with a view to bringing the
matter to the attention of the federal
parliament at its next session.

There are at the present time 270
farmers' elevators in Minnesota, with
an aggregate membership of 34,500
—an average of 128 members to a
company. The aggregate volume of
business of these companies may be
estimated, approximately, at \$24,000-
600 per annum, of which about \$22-
000,000 represents the value of grain
marketed and \$2,000,000 the value of
supplies purchased for members. In
90 per cent of the companies the
farmers hold practically the whole of
the stock. In all the companies,
farmers own a majority of the stock.

There has been an unusual demand
for Chinese egg products in the
United States during the last few
months, and that market has been so
short that the demand could not be
filled. One American firm which
usually purchased some 30,000 pounds
per annum is practically unable to
procure any part of this quantity at
terms on which the business will
prove profitable. This shortage is
largely accounted for by the fact that
many plants in China are owned by
the Germans, who, finding it impossi-
ble to obtain shipping facilities in
Japanese and British bottoms (which
nationalities control the entire trans-
oceanic shipping from the Chinese
coast), have closed down.

Agricultural News Notes



of the Pacific Coast

Northern California

Oroville, Butte County, estimates its rice harvest at 400,000 sacks.

Shipments of navel oranges are going out daily from Oroville.

A modern fire lookout tower has just been completed on Leek Springs in Eldorado County.

Orland, Glenn County, shipped out 12 tons of dressed turkeys for the Thanksgiving market in San Francisco.

State Horticultural Commissioner Cook has announced that the next meeting of the California Fruit Growers will be held in Napa.

Agents of the French government are in Contra Costa County endeavoring to arrange with stockmen for a carload of horses for shipment to Europe.

The department of agriculture will place men in the Oroville district the coming year to investigate the losses caused by olive thrips and to discover methods of control.

The California Commission of Immigration and Housing has sent out a warning to the unemployed in other states that there is no demand for outside labor in California.

To provide for inspection of dairy herds in accordance with the pure milk law ten additional state veterinarians will be put to work next October when the law goes into effect.

The North Bay Counties Association has decided to extend the work of the organization during 1916. Its annual meeting and election of officers will be held sometime during January.

State Veterinarian Keane says that many dairymen are already cleaning up their herds of tubercular cattle so they may be ready to meet the conditions of the pure milk law which goes into effect October 1, 1916.

Entries are now being made for the California State Poultry Show to be held at Sacramento January 14-18. Premium lists will be mailed to anyone upon request to California State Poultry Association, Sacramento.

At the recent annual meeting of the Farmers' Protective league in San Francisco it was declared the purpose of the organization to fight all efforts of organized labor to put through an eight-hour law at the next legislative session.

The canal from Richvale and Nelson Road to Butte Creek in Butte County has been completed and will be ready for delivery of water at the opening of the irrigation season. The canal is 50 feet wide on the bottom and 70 feet at water line.

The American Poultry Association of California has elected the following officers for 1916: President, L. C. Byce, Petaluma; vice presidents, Robert J. Venn, Fresno, and A. A. Bamford, Gardena; secretary, Henry W. Kruckeberg, Los Angeles; treasurer, M. E. Dillingham, San Gabriel; executive committee, Chas. R. Harker, San Jose; Ben M. Woodhull, Stockton; A. D. Robinson, Point Loma; Jos. E. Davis, Los Angeles; W. S. Russell, San Francisco.

Central California

Salida, Stanislaus County, is promised a cheese factory.

The San Jose grange at its recent annual meeting elected Dr. E. C. Abbott, master.

A bean shipper at Modesto has an order for 35 carloads of beans to be shipped to Stockholm, Sweden.

Peach growers of Hanford raised more than \$6000 in the interests of the California Peach Growers' Association.

California harvested more beans this year than any preceding year. The prices are expected to go up, at least as long as the war lasts.

A stockholders' meeting of the proposed Million Dollar Peach Growers' Association will be held in Fresno January 12 for the purpose of electing 25 trustees.

The Stanislaus County farm bureau will hold a series of pruning demonstrations. The demonstration at Denair will be given on the afternoon of December 13.

Ninety-four cows belonging to members of the Stanislaus Cow Testing Association reached a production of 45 pounds or more of butter fat in the 30 days of November.

Stockmen of Tulare have formed a temporary organization which will be the Tulare County branch of the Central California Stockmen's Association. A. W. Keck of Visalia is temporary chairman.

A practical pruning demonstration will be given in the vineyards of the Kearney ranch at Fresno December 17. F. T. Bioletti and F. C. Flossfeder of the state university will conduct the demonstration.

The Dinuba Sentinel reports many sales of peaches at 4½ and 4¾ cents, with rumors that independent buyers are in the field trying to get five-year contracts from growers at five cents to keep them from joining the new association.

The State Water Problems Conference, created by the last legislature has held several meetings at the office of the state railroad commission in San Francisco to discuss with irrigation engineers and others best way of proceeding to accomplish the work for which they were appointed.

It has been decided to call a mass meeting of prune growers of the Santa Clara Valley for some time in January to discuss the fixing of a reasonable minimum price to which they will hold for the next season's crop. The five-cent minimum determined on by the mass meeting of growers held in May has been successfully held to by the prune men.

Grand prizes at the Panama-Pacific Exposition were awarded to J. V. Falk of Turlock, Stanislaus County, for his display of cantaloupes, samples of which were also used for distribution to visitors from the Stanislaus County booth in the California building; to George C. Roeding of Fresno for his display of Calimyrna figs; L. Poers of Manteca for Malaga grapes.

Southern California

There was a farmer's institute at Paso Robles December 8.

The Valencia season in Azusa shows a total shipment of 77 carloads.

Redlands oranges are reported coloring up very fast and showing high sugar content.

Ventura has closed its walnut harvest and most of the nuts are out of the warehouses.

The packing house of the Richland Walnut Growers' Association finished its run on nuts last Saturday.

Several thousand head of cattle from Southern Utah have been received by ranchers of Paso Robles.

The Riverside County chamber of commerce held its monthly meeting December 10 and 11 at Blythe in the Palo Verde Valley.

The Redlands district has shipped some oranges for the Christmas trade. None except fruits that were well colored have been picked.

Orange County carried off the second longest list of awards of any county in the state from the Panama-Pacific. Placer County headed the list.

The next convention of the State Fruit Growers will be held in San Bernardino in connection with the National Orange Show, February 17-24.

A carload of horses was shipped last week from the Pioneer Ranch near Corona in Riverside County. They were consigned to the British government.

A box of semi-tropical fruits, nuts and vegetables, sent from Garden Grove in Orange County to the Oregon Agricultural College Fair at Corvallis won second prize.

L. A. Webster, editor of The American Sheep Breeder, is visiting Winthrop Howland of Redlands. Mr. Howland has one of the largest Toggenburg goat ranches in the United States.

J. P. Dargitz, recently appointed manager of the California Ripe Olive Association, has been in Southern California olive growing sections discussing marketing problems with the growers.

Two hundred and fifty citrus fruit growers from the Ontario-Cucamonga district attended the all day picnic meeting at the citrus experiment station at Riverside on Wednesday, December 1.

Interest in the proposed poultry school at Riverside is growing. The plan is to hold a short course of two weeks. All poultrymen interested may secure details by writing Secretary Dudley of the Riverside chamber of commerce.

The movement to secure the appointment of a farm adviser for Los Angeles County is progressing with a live committee managing the campaign. There will be a meeting at which Dr. Hunt and Mr. Crocheron of the state university will make addresses at the chamber of commerce at Los Angeles the latter part of December.

The Coast

Arizona's annual state poultry show will be held at Tucson December 16-18.

A large number of silos were erected in the country about Eugene, Oregon, this year.

The next meeting of the state horticultural society of Washington will be held at North Yakima.

Millard County, Utah, held its annual farmers' round-up and housekeepers' conference at Delta December 7-11.

Nevada's state experiment station at Logan held an exhibition the latter part of November. Much fine stock was shown.

Beet growers of Sevier County, Utah, are discussing formation of an association which will stand for better prices on sugar beets.

Strawberry growers of the Yakima Valley of Washington are working on a cooperative association to handle the marketing of their berries.

The Portland Union stock yards report the top price on hogs at six dollars. Five thousand porkers were brought to the yards on one day last week.

The Arizona experiment station is issuing a bulletin "Irises for Southwestern Gardens" written by Prof. J. J. Thornber. It may be obtained on request to Experiment Station, Tucson.

The Utah Horticultural Society, in its recent meetings at Provo and Ogden discussed the feasibility of marketing fruits through canneries which the growers themselves manage.

The Northwest Fruit Shippers' Council has been formally incorporated. The corporation is prepared to undertake a very ambitious advertising campaign throughout the United States.

The Cascade Live Stock Show just closed at North Yakima, Washington, was most successful. Six thousand dollars in prizes was distributed. Plans are already being made for next year's show.

A small apple box containing only one-fourth the quantity of apples held by the standard apple box has proven a popular way for marketing Washington apples, according to a fruit packer of Wenatchee.

The total production of apples in the states of the Pacific Northwest; Washington, Oregon, Idaho and Montana, is estimated this year by government statisticians at 13,238,000 boxes against 14,500,000 in 1914.

The Utah Irrigation Law, authorizing any person desiring water for irrigation purposes to enlarge existing canals after compensating the owners, has been declared constitutional by the United States supreme court.

Potato growers of the Redmond, Powell Butte, and Lower Bridge districts of Oregon have formed a potato growers' association to promote the growing of a better grade of potatoes and secure a better market price.

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Redwood

Pipe Tanks

We build to order, for any capacity, TANKS FROM CLEAR AIR-DRIED REDWOOD—THE WOOD EVER-LASTING.

Our tanks are built to exact measurement by the most skilled mechanics.

THEY ARE GUARANTEED ACCURATE IN EVERY PARTICULAR.

Built for All Purposes

They are cheaper than metal tanks and outlast several of them.

WE ALSO BUILD TANK TOWERS.

Remco Redwood Pipe

Is scientifically designed and perfect in manufacture. The smooth interior gives greater carrying capacity.

Design and workmanship give strength.

Redwood gives length of life.

Suitable for Irrigation, Power, Water Supply and Drainage or Sewage Disposal.

Redwood Manufacturers Company

1604 Hobart Building, San Francisco

Live Stock and Dairy



REAL STOCKMEN AND OTHERS

Written for California Cultivator

By W. S. Guilford



WHEN the wet, rainy days of winter come, then is the time that the man who is the real stockman, the one who has the love for his animals as a part of his very nature, has "luck" with his animals, while those who do not have this instinct just cannot understand why things do not go better.

It is just as natural for the born stockman to want to be with his animals during stormy weather and see that everything is all right in every way as it is for him to breathe or perform any other involuntary act. He thoroughly enjoys getting out in the storm and rain and cannot be content until everything is fed and sheltered for the night.

And to this sort of a person there is as much thorough satisfaction and pleasure in this caring for stock in bad weather as music lovers derive from hearing great music well rendered.

That there is no accounting for tastes is doubtless true, but it is a fact that some men are so constituted, and it is a mighty good thing for the domestic animals of the world that such is the case.

There are a great many young men who are attending agricultural colleges all over the country. Some of them are doing this because they know that they want to make some branch of agriculture their life work. Others are doing it because they have to do something and the pictures that have been painted about the life of the farmers are now frequently very attractive. Ten years ago a student studying agriculture in any of the great universities had very little standing and was rather looked down upon. Now the situation has changed and the agricultural course is one of the most popular in the list.

Some of the boys who have made up their minds that they want to specialize in animal husbandry will do well to get out on some real stock farm during the winter season and see if they find anything near to pleasure in being out in the elements caring for stock or if the mud and the wet and the exposure are entirely distasteful to them. If the latter is the case it would be well to look about for some other life work—the chances are that he is on the wrong tack and the sooner he gets into something else the better.

This applies with equal force to many of the "back to the landers" who have been led to believe—or have led themselves to believe—that wealth and contentment is by way of making payment on a small piece of land. There are many who will succeed because "they have it in them"—there are some others who had better be somewhere else.

Testing the best cows in a herd has value only to breeders selling stock as an advertisement, but testing the whole herd is of the greatest value to all dairymen as an economical proposition; there are greater differences between the yield of individual cows of the same breed than between the average yield of different breeds.—Hansen's Dairy Bulletin.

CALIFORNIA SWINE BREEDERS' ASSOCIATION SALE

A letter from Secretary J. I. Thompson of the California Swine Breeders' Association calls attention to the coming auction sale to be held at the state fair grounds at Sacramento January 27. Regarding the entries Secretary Thompson says:

"Because the entries will evidently be much larger than can be handled in one sale in a day it seems absolutely necessary to limit the number entered by each man to five, and should those entered exceed the number that can be handled in one day it will be necessary to reduce each entry somewhat. Will you, therefore, kindly list your entries in the order in which you are most anxious to sell them, viz., put first, second and third hogs that you prefer to sell, so that if is necessary to cut one or two of your entries off, the last one or two will be removed."

An entrance fee of \$3.00 per head will be charged. Entries close December 25. Hogs must be shipped at owner's expense and charges prepaid. Only members of the association may consign hogs. Membership fee is \$1.00 and the Secretary, J. I. Thompson, may be addressed at Davis.

Entry blanks are now being sent out to all members of the association. It is requested that everyone making entries shall send pedigrees. Every hog in the sale must be registered; the fact that a hog is eligible but not yet registered is not sufficient.

The association guarantees that "Every animal sold will be guaranteed to be a breeder by the consignor, and should any animal fail to breed equally as good an individual that is a breeder will be given by the seller in its stead. The guarantee only binds the breeder selling the animal."

The annual meeting of the association will be held January 26 at Sacramento.

BERKSHIRES SELL WELL

Written for California Cultivator
By Sacramento Valley Contributor

If the recent sale (Oct. 14) of Berkshire hogs, farm stock and machinery at Clark Acres near Willows is to be taken as an indication of financial affairs among farmers of Glenn County, things are in very good shape. Everything sold well and competition was keen.

About 100 head of Berkshires sold at from about \$15 for pigs to \$65 for sows.

This was considered very satisfactory in view of the fact that the herd has never been exhibited, has not been advertised extensively, and the animals have never been fed or cared for as Mr. Clark has felt they should have been.

Local buyers took all of the offering which, because of the facts enumerated above were good bargains for the purchasers. James Mills of Hamilton City bought over 50 head to add to his splendid collection of Berkshires; O. L. Raper and G. C. Clare of Glenn bought several choice ones to add to their

First Annual Auction Sale of Purebred Hogs

under the auspices of the

California Swine Breeders Association

will be held at the

State Fair Grounds, Sacramento, Cal.

on

January 27, 1916

100 head of pure bred hogs of various breeds will be sold. These represent the tops of some of the best herds to be found in California. All hogs sold will be registered and will be guaranteed breeders by the consignors. The catalogs will be ready about January 12th, and can be secured of

J. L. Thatcher, Riverside, Cal.

or J. I. Thomson, Davis, Cal.



Won Highest Exposition Honors

Highest in lubricating efficiency—highest among the many oils competing—a triumph for lubricating oil made from asphalt-base crude.

ZEROLENE

the Standard Oil for Motor Cars

The Jury of Awards at San Francisco and San Diego awarded Zerolene the gold medal in recognition of its superiority.

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20

Shorthorn Bulls

All registered and tuberculin test-
ed. Age 10 to 36 months old. Every
one a splendid individual, carry-
ing the blood of such noted sires
as White Hall Sultan 163573,
Gladstone 239313, Royal Cumber-
land 316722. Correspondence so-
lited, inspection invited.

H. L. Murphy
Perkins, Sacramento Co., Calif.

Holstein-Friesian Cattle

Registered young bulls from best
families. Some of serviceable age
—also both young and matured
females.

Registered Berkshire Pigs

Masterpiece, Longfellow and
Robin Hood strains. Extra fine in-
dividuals of both sexes at reduced
prices—we pay registration fee.

Careful attention given to mail
orders.

Whittier State School
Whittier, Calif.



ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.
will reduce inflamed, swollen
Joints, Sprains, Bruises, Soft
Bunches; Heals Boils, Poll
Evil, Quittor, Fistula,
or any unhealthy sore
quickly as it is a positive anti-
septic and germicide. Pleasant
to use; does not blister under
bandage or remove the hair, and
you can work the horse. \$2.00
per bottle, delivered. Book 7 K
free.

W. F. Young, P.D.F., 244 Temple St., Springfield, Mass.

BERKSHIRES

Well Bred Gilts. A few fine
young boars ready for service.
Several weanlings for sale. Won
first on aged sow San Francisco
Exposition 1915.

F. W. White - Elk Grove, Cal.

Glenview Poland Chinas

Registered pigs from weanlings up,
from best families and are good in-
dividuals. Can spare two or three bred
sows. Write your wants and get my
prices.

C. R. Hanna, Rte 3, Riverside, Cal.

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BREEDERS OF

Pure Bred Registered Berkshires

Stock of choicest type and quality and
of the best recognized blood lines. Come
and see us. If you can't come, write.

218 Loring Block, Riverside, Cal.

Protect Your Hogs

against the ravages of cholera
by vaccinating them

with **Purity Brand Serum**

made and tested under the most rigid
U. S. Government supervision; sold at
reasonable prices. It's a business propo-
sition. You're buying protection. Write,
or telephone **Thatcher Serum Co., River-
side, Cal. J. L. Thatcher.**

Thoroughbred Poland China Swine
High Grade Stock of Best Strains
Young Stock For Sale

M. BASSETT Hanford, Cal.

herds; Senator Claude Purkitt se-
cured a boar for his Hamilton City
ranch; N. W. Belleville of Glenn, who
has several registered animals,
bought a boar; A. C. Derbrow of Wil-
lows bought several sows, as did C. O.
McAuliffe. The herd boar, Royal
Masterpiece 18th, went to Schneider
& Waller, Glenn, who have a good
lot of sows to mate with him.

* * *

Great progress is being made in
Glenn County along live stock lines.
Dozens of herds of registered hogs
are being established and in addition
to the pure bred cattle herds there
are very few grade herds in which
registered bulls are not being used.
J. L. Windell of Glenn is establishing
a flock of registered Shropshires—
stock being secured from one of the
most prominent Eastern breeders.
More will be told of this soon. And
at Butte City Ranch at Butte City
one of the best herds of Berkshires
in the West is being established.

The number of pure bred herds and
flocks is increasing not only in the
older settled parts of the county but
particularly on the Sacramento Val-
ley Irrigation project and the Orland
government project. Many progres-
sive Eastern breeders have bought
irrigated land and are continuing
their operations here, and many other
enterprising farmers and business
men who have bought these lands
realize that only with pure bred stock
will the greatest possibilities of Cali-
fornia agriculture be developed.

HAVE HOGS HEALTHY

Keep hogs thriving; strong, healthy
hogs resist cholera.

Quarantine every hog dead from
cholera; the law requires it.

Lice, worms and unsanitary condi-
tions weaken hogs and invite cholera.

Disinfect hog yards occasionally
with unslaked lime; it's good cholera
insurance.

Serum and sanitation make the best
preparation for the warfare against
hog cholera.

Keep cholera hogs and carcasses
away from the stream and insist that
your neighbor do the same.

The straw shed for hogs is almost
sure to be either damp or dusty.
Either condition invites disease.

Keep gunny sacks saturated with
crude oil where hogs can rub against
them. Raise more hogs and fewer
lice.

Kill lice with crude or fuel oil
sprinkled on the hogs at feeding time,
applied to rubbing posts or used as
a two-inch layer on top of the water
in a dipping tank.

Coughs and pneumonia from dusty
beds may incidentally be prevented if
louse infested beds are oiled. Breath-
ing dust may cause death from pneu-
monia and certainly renders hogs less
resistant to cholera.

Sprinkle freshly slaked lime about
one-sixteenth of an inch deep over
the lots, sprinkling quarters once
every month or two. At this rate a
barrel will kill the germs on about
1280 square feet of lot space. Combat
worms by feeding a mixture of four
quarts of charcoal, three parts of
copperas, three parts of common salt,
three parts of Glauber's salt, three
parts sal soda, one part sulphur. Mix
in 100-pound lots and keep in a dry
place where the hogs can help them-
selves. It is a good conditioner and
has been thoroughly tested at the Mis-
souri agricultural experiment station
and on many farms.

Corn in the silo is like money in
the bank—ready for use when most
needed.

Why Do Dairy Cows Run Down?

No other farm animal is the cause of so much anxiety to the
owner as his dairy cows; sickness gets in in spite of the best
of care.



Why?

Because the dairy cow is subjected to
constant forcing to get the maximum in
quantity and quality of the milk yield.

This constant strain
proves too much for
many a good cow;
some important

function becomes impaired and for want of proper
medical assistance she becomes a "backward" cow.
In just such cases as these Kow-Kure has made its
reputation for success when used to

Raise the Health Standard

of the herd. Kow-Kure is a medicine for cows
only—not a stock food. It has wonderful
medicinal qualities that act on the organs of
production and reproduction for the preven-
tion or cure of many serious cow
ailments. It is especially useful in
cases of Abortion, Barrenness, Milk
Fever, Scouring, Lost Appetite,
Bunches, Retained Afterbirth, etc.
Farmers who used it keep Kow-
Kure on hand constantly. Most
feed dealers and druggists sell it.

Sold in 50c and \$1.00 Packages

Dairy Association Co.,

Lyndonville, Vt.

FREE BOOK

"The
Home Cow Doctor"

A book that should be
in every farmer's li-
brary is yours for the
asking. It may be
worth hundreds of dol-
lars in a critical mo-
ment.



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17 Cows-450 Quarts Milk
Enterprise, Kan.
Gentlemen
I like the EMPIRE better every day. I
am milking 17 cows—getting 425 to 450
quarts a day. On heifers I have better
success than on old cows. They stand
better for machine than by hand. How-
ever, the old cow after a week takes all
right to her new calf.
Yours respectfully
A. H. DIEHL

Empire Mechanical Milker

The firm and gentle massage of the
teats by natural atmospheric pressure
coaxes the cow. She responds gen-
erously—in many cases gives even more
milk than before. No compressed air
used. No chance for sore, inflamed
teats or udders. No dirt, germs or stable
air comes in contact with the milk.
One double or two-cow Empire unit
takes care of 20 to 30 cows per hour.

One man can attend to two double units.
Everything rapid, clean, sanitary. In-
stallation simple, easy and inexpen-
sive. Only one tank—one pipe line.
Let us send you full description and
pictures of Empire Milkers and Empire
Cream Separators that are making
good in many fine dairies. Ask also
for our offer on the Empire Gasoline
Engines and Empire Star Feed Mills.

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LOS ANGELES, CAL.

CARE OF DAIRY CALVES

Careful attention on the part of a dairyman during the two weeks that follow a calf's birth will often mean the ultimate addition to his herd of a large, well developed milking cow, instead of a sickly, undersized, stunted animal. The problem of raising calves is today a more complicated one than when it was customary to feed a larger amount of whole milk. The dairyman will therefore find it to his advantage to take the best possible care of his calves from the very beginning.

Immediately after birth the navel of the calf should be washed with an antiseptic solution and tied with a silk thread in order to prevent infection. For the first feed the calf should have the first milk from the cow after calving and should have its mother's milk for several feeds thereafter. The sooner the weaning takes place the better, but ordinarily it should not be postponed later than the fourth day. The sooner the calf is weaned the more easily it is taught to drink. When first fed from the pail, eight to ten pounds of milk a day, fresh and warm from the cow and divided into two feeds, are sufficient. The feeding times should be as nearly regular as possible, and at first it is advisable to feed more than twice a day. The amount fed should be constant; and to insure this, scales should be used, as variation tends to get the digestive organs out of order. At all times the utmost care should be taken to prevent any digestive disorder, as all such trouble hinders the growth and development of the animal. Calf scours is the most common indication of this condition.

The following named precautions, to a great extent, tend to prevent scours:

Feed regularly.

Be sure that the milk is always sweet and warm.

In feeding use only clean pails.

Feed the calf a little less than it wants.

Reduce the amount of milk one-half if the animal becomes sick.

The amount of milk fed can be gradually increased until at the end of the second week the calf receives from 14 to 16 pounds of milk a day. At this time the gradual substitution of skim milk for whole milk may commence. Hay and grain should be placed before the calf at this period, and it will be found to nibble at them a little. At the end of the third week

the substitution of skim milk will be complete. By slow changes the milk can be increased thereafter until 20 pounds a day are fed; this amount will be found sufficient when fed with the grain and hay. If skim milk is plentiful more may be fed, but the added amount will not give proportionately better results.

Corn meal, bran, and oil meal, mixed in the proportion of three, two, and one, make an excellent grain mixture. This grain when fed with plenty of fine clover hay makes an ideal supplement to skim milk in balancing the ration.

Calves should be allowed all the grain that they will eat until they consume three pounds a day; from this point the feeder should use his judgment as to whether an increase is justified.

The calf, from the time it is two weeks of age, should always have access to plenty of clean, pure water.

The general practice is to feed calves skim milk for from two to six months. In the latter case, with fall calves the time of final weaning from milk comes in the spring, when pastures are ready. Under this system the calves usually make excellent growth during the entire period without any break in gains.

KINGS COUNTY POLAND-CHINA BREEDERS

Kings County Poland-China breeders have announced a sale of pedigreed Polands to take place at Hanford on Saturday, February 5, at the pavilion. "It's under roof, so every one come, rain or shine," says Acting Secretary Newton. A hundred and fifty hogs from the herds of Messrs. Bernstein, Smith, Trewhit, Gilkerson, Ross, Dimmick, Bassett, Henderson and Crawshaw will be consigned.

The association assures us that a genuine roast pork lunch will be served at noon and adds "The breeders are out to raise the general standard of hog raising in California and to this end are sacrificing some of their best at this sale in order that others may get started in the right direction." Many of these offerings are from P. P. I. E. prize winning herds and all are to be sold.

Hog raisers and others interested in the swine industry met at Phoenix, Arizona, Wednesday and held a most interesting session.

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Poultry for Profit



THE VIGOROUS HEN—HOW SHALL WE KNOW HER?

Written for California Cultivator
By Jean A. Koethen



HERE seems to be no one "secret" for the development of a strain of prolific layers. Selection is of course the slogan for like begets like. We must breed from the best but how pick out the best? The trap nest is doing wonders in this respect. Perhaps there is no test quite as sure if layers are wanted, and yet we are told that the best layer is not always the best breeder, that the heavy layer may have her vitality so sapped by heavy laying that she cannot pass on her own good qualities to her progeny. On the other hand, we are also told that a hen must have constitutional vigor to begin with or she cannot be a heavy layer.

Doubtless the desirable breeder, male or female, must be vigorous. If it is not the chicks for which it is responsible will fare badly in this chilly world. But vigor is not the only qualification of a breeder, basic as it is. I have seen many vigorous hens that were indifferent layers and persistent sitters. To breed from them indiscriminately would be foolish. Let us say, rather, not every vigorous fowl is a good layer or a desirable breeder but the desirable breeder must have health and vigor as fundamental qualities or we are wasting time breeding from it.

After reading in the Cultivator of November 11 Mr. Stickney's quotation from a California expert to the effect that he knew of no way to pick out the vigorous hen I rushed to my pen of select pullets and sat down among them to see if they wouldn't tell me some secret by which the most vigorous might be known. I saw at once that Mr. Stickney's test of the round, broad-backed shape would not work with Orpingtons, however well it might with Leghorns, for all Orpingtons have fairly broad, blocky backs, and these pullets of mine all felt exactly alike. All but one of the 20 had bright red combs. The one exception was a pullet I recognized as one I had hesitated to put in the pen because her comb was slow in developing. Her comb was now smaller than those of the others and not so bright, and she stood "hunched up" in a way I did not like. I shall certainly not select her for a breeder next year, for she is not the best.

There is something in shape, no doubt, when it comes to either vigor or egg production, but I believe there is more in behavior. Take the hen that is loafing in the shadiest corner, as some of mine were that day. I wouldn't pick one of them as a breeder, though they are probably only a bit lazy. The biddies that come to meet me, talking and singing, that are always picking around for something to eat, always first at the feed trough, and last to go to roost, are the biddies I want in my breeding pen.

We must remember that we do not need many breeders. Six or eight or ten hens are sufficient, if only they be the very best. It is not therefore

necessary to settle every hen's exact rank in the scale of vigor. The laying test is different, and many a hen that is worth keeping a year for the eggs she lays is not worth keeping a second year in the breeding pen. It ought to be possible, in almost any flock, to select six hens that are unquestionably vigorous, even if we do have to let the majority go unclassified.

I think we shall find if we study our hens carefully that there are in general four marks of the vigorous hen: 1. Activity or alertness, which I have already mentioned. 2. A bright red comb. 3. A solid body. 4. Shining plumage. A hen may be "under the weather" for some reason or other, I suppose, and still be a vigorous hen but she is open to suspicion. For instance, I noticed that one of my yearling hens, which are now molting, had a pale, shrunken comb while all the rest in spite of the molt kept their red combs. When we needed a chicken for the table the choice fell on her as the least desirable breeder and then I discovered that she had a crooked breastbone which would inevitably have unfitted her for a breeder. A crooked breastbone, it is said, no matter how it is caused, is always a sign of inferior vitality and I have often found, after selecting a hen because of her sluggish bearing or pale comb, that she bore concealed this sign of weakness.

When I mention "a solid body" as a mark of vigor I mean that the bird, when held in the hands, feels firm and solid to the touch—not fat, for fat is by no means a mark of vigor—but just solid. A small, relatively thin bird may be solid and muscular, as any Leghorn breeder can testify. A bird with a flabby "feel" is as suspicious as one with a pale comb.

A healthy hen is always glossy, except in the molt. For some reason a weak bird frequently fails to secrete the oil necessary to keep the plumage glossy and shining. The feathers of a sick bird are always rough and dry. The drooping tail is also a sign of want of vitality. The sick bird always holds the tail low and the bird of low vitality is more or less inclined to the same carriage. Select for a breeder the hen that holds herself upright and carries herself with a spring as if she found life worth living.

I do not know that it is possible to classify and pigeonhole absolutely the signs of constitutional vigor but I do know that, whether or not we can exactly define it in all respects, there is that in the carriage and appearance and manner of the vigorous hen, her way of meeting the problems of life, if you please so to name it, that marks her almost infallibly. There are doubtful birds, plenty of them, but the birds of superior constitution shows it. Sometimes we may know her by her "wicked eye." I had such a Buttercup last year. She drove every other hen away from the feed hopper and would have driven me away if she could.


But it is by no means necessary or wise to wait till a hen is a hen to select for constitutional vigor. Se-

lection is far easier in the months preceding maturity. The chick that is first out of the shell may safely be marked as probably the most vigorous and the last hatched is more often than not hardly worth hatching at all. The chick that stands in a corner and looks droopy while the others are hopping about looking for food might well be culled out for it will probably die anyhow. The chick that is behind the others in growth and the chick that feathers too slowly are both culls. The pullets that feather out first and the cockerels that first show comb are the most vigorous of the bunch and should be banded. In most cases these are the pullets that when laying maturity has arrived will be cackling and singing and hustling for food. These early signs of vigor ought never to be neglected. It is a great help, if all pullets look alike at nine or ten months of age, to remember that this one kept hustling right along from shell to laying house and that that one lagged a little bit.

It is time we got down to brass tacks and did away with the haphazard methods that handicap the amateur poultryman. We take each season's chicks by faith believing that if last year's developed into fair layers these will. My neighbor said the other day: "I don't see why I'm not getting more eggs this fall. My hens did so well last winter." A question or two brought out the fact that this year's hens were from entirely different stock and she knew nothing about the antecedents of either lot. Very likely the owner didn't, either. So many back-lot poultry keepers buy a male bird wherever they can, if only he is cheap, and breed him to whatever hens happen to be laying. There is no fun in that sort of breeding and mighty little profit.

I'm hoping that some day a race of amateur poultrymen will arise who will keep good poultry for its own sake, and not for the sake of the scanty dollars they may wring from the pockets of a gullible public. I'm hoping the day will come when every back yard will be the home of a dozen or so choice, bred-to-lay hens, all of one breed. I pass such a place every time I go to the city. The birds are Barred Rocks and the sight of them, ranging over a green field, is a sight for sore eyes. Not a buff or a red to mar the harmony. I'm looking for the time when every person who keeps chickens will seriously try to learn the principles of breeding and will not be satisfied unless his stock improves from year to year. Till then, let the slogan of every poultry lover be, "Quality first."

In selecting a site for the poultry house remember there is no germ killer like sunlight, and it is far cheaper than anything that will ever be placed on the market. Another thing to be watched is the problem of drainage. Damp, low ground, no matter how well the hen house is sheltered, is not suitable for a chicken shelter.



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MacFarlane Strain White Leghorn Eggs \$1.50 per 15, \$2.50 per 30, \$5.00 per 100. Chicks Dec., Jan., Feb. 12c each, afterward 10c. Order now, any quantity. Cockerels \$2.50. Big plant, lowest prices, stock better than ever. Catalog free. Correspondence solicited. Newton Poultry Farm, Dept. 3, Los Gatos, Cal.

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Penn's Quality Barred Plymouth Rocks. At the World's Poultry Exhibition, San Francisco, our WESTERN BRED Rocks ranked among the best in the WORLD, both in UTILITY and EXHIBITION points. Catalogue free. GOLDEN RULE POULTRY FARM, St. Helena, Cal.

Baby Chicks—All sturdy youngsters from good stock. Hatched right and arrive safely. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders asked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

Brown Leghorn, White Leghorn day-old chicks that are well-hatched and strong from healthy, vigorous breeders. SAN JOSE HATCHERY, 371 Meridian Road, San Jose, Cal. "Chicks well hatched are half raised."

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

S. C. Rhode Island Reds, Lester Tompkins and Winslow strains eggs for hatching. Day old chicks. Prices on application. Rainescourt Poultry Ranch, Zelzah, Calif.

A Few Silver Campine Cockerels bred from heavy layage stock; Hering strain; fine shape, beautifully marked, \$3 and \$5 each. VALLEY POULTRY FARMS, Concord, Cal.

Petaluma Hatchery—Capacity 16,000 chicks a week. Five varieties. Can ship to points reached in three days. We challenge the hen. Send for circular. L. W. Clark, Petaluma, Cal.

Barred Rock Cockerels, \$2.50 each. Am now booking orders for Rhode Island Red and Barred Rock Chicks for Feb. delivery, 15c each. G. L. Hawley, Madera, Cal.

S. C. White Leghorns—Hoganized; bred to lay. Booking orders now for hatching eggs. \$6 per 100; \$50 per 1000. R. H. Dickinson, Pine Tree Poultry Farm, R. F. D., Los Gatos, Cal.

White Plumage Poultry Farm and Hatchery sells White Leghorn baby chicks, full of vigor and healthy, from our own stock. Circular tells it all. Exeter, Cal.

S. C. W. Leghorn Cockerels, pairs and trios; also booking orders for DAY OLD CHICKS; all from the highest utility fowl. Jos. E. Blackshaw, San Jacinto, Cal.

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For Rent—Small ranch one mile from city limits. Rich land, suitable for hogs and dairy. Fine opportunity for right man to start with small expense. Write Box 414, Visalia, Cal.

TREES

Walnut Trees—The finest Placencia Perfection trees to be had; grafted on Northern California black roots. Reports from trees purchased from me last year show them to have made phenomenal growth. I was unable to fill all my orders last year, so place YOUR order NOW and insure yourself against disappointment. I have also a few of the famous Willson Wonder trees for sale. Prices reasonable. Jno. W. Henderson, El Monte, Cal. Phone El Monte 86-R.

Walnut Trees—Late blight resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California Black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placencia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

Tribble Nurseries, Elk Grove, Cal.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble Mayette, Kerr Parisienne, Gladly and Improved Franquette, 19 other walnut varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots and other fruit trees and plants. New list ready.

For Sale or Exchange—2500 Placencia Perfection Walnuts; 4000 olives, San Bernardino County delivery; Valencia, lemons, grapefruit, all citrus trees; will trade citrus stock for clear vacant land, or equities that carry themselves. O. E. Van Slyke, 916 Story Bldg., Los Angeles, Cal., or Azusa, Cal.

Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

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Apriots, Sugar Prunes and Olives—All first class stock. Royal, Blenheim and Tilton Apriots, Mission, Manzanillo and Ascolano Olives. Correspondence invited. C. E. Moyer, Hemet, Cal.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

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Thoroughbred Strawberry Plants—Early Ozark, Gold Dollars, Wm. Belt, Goodells, Kellogg Prize, Marshalls, Magoons. \$2.50 per thousand. Mr. John Christensen, R. F. D. 2, Canby, Oregon.

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double acting Ames head, \$125; cen-
trifugal, rotary and plunger pumps of all
kinds.

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inch, \$6.50; spike harrows, \$8 to \$12; sin-
gle disc harrow, \$24; double disc, \$29;
horsepower gear, \$15. Fine 16-inch rid-
ing sulky plow, \$29; fine mower, \$22.50;
rakes, \$18 to \$21; horse power baler, \$35;
Emperor power baler, \$195; Southwick,
like new, \$350; hay loaders, potato dig-
gers and cutters; planters, rollers, 2-ton
Knox auto truck, \$95; fine Weber wagon,
\$39; tractor plows and discs; sundries.
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garden, horses. Temperate, bachelor,
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offer quickly made. Address Dillon, care
Mr. Temple, R. F. D. Box 16, El Monte,
Cal.

Wanted to hear from owner of Farm or
Fruit Ranch for sale. O. O. Mattson,
Minneapolis, Minn.

Wanted—To hear direct from owner of
good farm or unimproved land for sale.
C. C. Buckingham, Houston, Texas.

Heavy snowfalls have driven the
sheep from the ranges of Utah and
sheepmen are having troubles in find-
ing sufficient pasturage.

for writing out a mortgage? Is there
a maximum charge? Would it be
more for a mortgage of \$5000 than
for one of \$1000?—Subscriber, Parlier.

The cost of making out deeds and
mortgages varies all the way from
nothing up to two or three dollars,
or possibly even more in a very com-
plicated instrument. The more com-
mon charge, however, is 50 cents to
one dollar.

Feeding Spineless Cactus

Some years ago I purchased several
slabs of spineless cactus after read-
ing advertisements of their great for-
age qualities, but as yet I have failed
to get either cattle or hogs to eat
them in the whole slabs or when cut
in pieces. Kindly inform me as to the
proper method of feeding the cactus
and whether it is worth the trouble?
—Subscriber, Dinuba

We believe this is one trouble with
the feeding of spineless cactus. As
an inducement, however, we have
heard of slicing the slabs and sprink-
ling over liberally with bran.

Planting Walnuts

Could one successfully, and would
it be practicable, to plant walnuts in
a seven-year-old peach orchard, set-
ting in the squares at about the usual
distance apart?—Subscriber, Hemet.

Certainly not as successfully as if
the ground were entirely cleared of
the old trees and the new ones given
entire possession. Peach trees or
that age are practically interlacing
their roots. Thorough subsoiling and
cutting of the roots, reaching to the
centers, might aid and fair walnut
trees be secured, but growing two
orchards at the same time on prac-
tically the same ground is a most
difficult task.

Currants

Will currants do well along the

Southern California seacoast? What
is the best variety? Where may cut-
tings be obtained? Where are cur-
rant grapes grown in this state?—
Subscriber, Davis.

The so-called Zante currant to
which we presume the writer refers
has been tried in California with in-
different success. It has not at least
come up to our small seedless grapes.
We would like to hear from any sub-
scriber who has had experience with
this form of grape.

At the Cascade Live Stock Show re-
cently held at North Yakima 72 head
of registered Holsteins were sold at
public auction, bringing an average
price of \$221.87 per head. The high-
est priced cow brought \$950. She was
Jacoba Choicest Mercedes 2nd, the
first Yakima Valley cow to produce
better than 30 pounds of butter in
seven days. She was the property of
W. M. Nelson & Son and was sold to
F. S. Stimson of Seattle.

Deciduous fruit growers of Los An-
geles, Riverside and San Bernardino
Counties met Saturday, December 11,
at Ontario, to consider plans for the
formation of the San Antonio Grow-
ers' Association, which contemplates
marketing fruits of members through
the California Growers' Association.

During the Imperial Valley agricul-
tural assembly Secretary Wallschlae-
ger of the Citrus Protective League
will give a talk on the relation of
efficient marketing to the farmers'
profits. The assembly also hopes to
have Col. Harris Weinstock, recently
appointed state market commissioner,
come to the valley at that time.

Only 700 tons of raisins remain in
Dinuba vineyards.

Questions

THE EDITOR

and Answers

AND STAFF

Questions to be answered in this de-
partment should be received at this
office one week before reply is expected.
Write plainly on one side of the paper
and sign full name and address. Un-
signed communications receive no atten-
tion.

Winter Pear—Blight

On page 547 of our issue of Decem-
ber 2 the statement was made that a
treatment for pear blight was spray-
ing with Bordeaux just before the
buds burst. The Cultivator has often
made the point that the only effective
treatment against pear blight is the
pruning knife and we regret very
much the statement as it appeared.
We must face the blight situation
with the pruning knife or our pear
orchards must give way. The state-
ment referred to called forth a let-
ter of correction from Mr. A. L.
Wisker of Grass Valley. Mr. Wisker
writes:

"Spraying for blight is just about
as effective as a skin wash would be
for tuberculosis in the human family.
The only spray that is of value is one
that controls such insects as aphids,
which sometimes act as blight car-
riers from twig to twig or from trunk
to root, and this part of blight control
is of secondary and not primary
value. My catalogue gives the recom-
mendations of the highest authorities
briefly condensed as follows: "Boiled
down, the blight situation resolves it-
self into this: Japan roots; resistant
varieties (Anjou, Bosc, Comice are
more resistant than Bartlett); avoid-
ing soils, fertilizers, and cultural
methods that lead to a rank, spongy
growth in the tree; vigilant inspec-
tion; pruning out all points of infec-
tion; treating every cut and the prun-
ing tools after each cut with antisep-

tics such as bichloride of mercury
properly applied; and gathering up
promptly and burning the infected
parts. Successful control will follow
these methods—but the work is no
job for a lazy man or a woodenhead.

"There are only two late pears that
answer your subscriber's require-
ments of a pear that is perfectly
adapted to the table and to canning.
These are Anjou and Comice, both
much more blight-resistant than Bart-
lett and of highest quality. Winter
Bartlett is a pear of very slight
merit and has not made the least
headway as a desirable variety. Ja-
pan-root trees will do well in shal-
low, granite soils if irrigated."

Pear blight treatment was given in
our issue of November 4, written by
Percy Gammon of Sacramento
County.

Alfalfa Unthrifty

A subscriber at Burbank has sent
roots of alfalfa, tops of which are un-
thrifty and yellow as if lacking
water. They were, however, abun-
dantly supplied with moisture. These
roots were submitted to the pathologi-
cal laboratory at Whittier and Mr.
C. O. Smith answers:

"I have examined these roots
microscopically but cannot find any
sort of fungus or other organism in
the tissue. On the leaves there is a
very common fungus spot, but I do
not think that this has in any way
affected the vitality of the plants."

Fee for Writing Mortgage

What is commonly the charge
made by a notary public or lawyer

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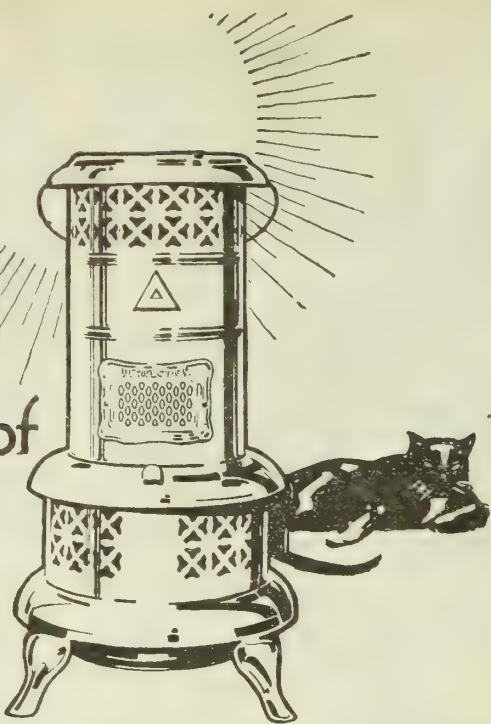
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large or small. What do you expect to plant? Address Main Office, 2501 Tulare Street, Fresno, California.

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summer
sun



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or **Cultivator, Pub. Co., 115 No. Broadway, Los Angeles, Cal.**

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See Announcement at Head of Editorial Page



The Household Department



THE CHRISTMAS GUEST

Whoso shall come my way this night,
By moor or hill or shore,
For him the blessed candles' light,
For him the open door.
(Oh, Mary, this for thy Son's sake,
Though mine comes in no more!)

My hearth is swept, my Yule logs burn,
My board is decked and spread;
For any who may seem in turn
Are warmth and wine and bread.
(Oh, Mary, grant my son this night
Be housed and comforted!)

Bid, banned or beggared come for guest,
My heart shall share his woes,
And on his head my hand shall rest
To bless him ere he goes.
(Oh, Mary, grant my son this night
That blessing and repose!)

This night, for thy one Son's dear sake,
Wait light and warmth and wine.
Oh, Mary, we be mothers both!
Take these my tears for sign,
And this I do for thy sweet Son.
Wilt thou not do for mine?
—Theodosia Garrison.

BEING ORIGINAL

"Well," said Mrs. Steelby, sighing with a somewhat weary complacency, "today I really did a good day's work, John."

"How's that?" queried Steelby, briefly, attacking his chop with fervor.

"You know how rushed I always am at Christmas, John," explained his wife, "so that I get packages all mixed up and send people the wrong articles by mistake."

"For instance, that little break of mailing pink baby booties to our esteemed bachelor uncle," John suggested.

"Yes," agreed his wife, hastily. That particular blunder was still a sore point. "But more than that, John, it's the foolish selections you make when you are hurried. You don't have a chance to show any originality. Mrs. Briggs, who talked beautifully at the club Wednesday, showed us that it was a positive insult to our friends to give them things picked up in a hurry at the last minute, so I made up my mind to be as original as I possibly could be in every single case. So I caught the 9:15 train this morning and simply put in the day downtown, looking for things."

"But it is such a satisfaction to know that you have accomplished a lot," pursued his wife, dreamily. "I don't mind being all tired out and missing five calls and tearing my lace waist in a basement bargain department. I feel very grateful to Mrs. Briggs for putting it into my head to be really original this Christmas."

"What did you get?" inquired Steelby, with his first real appearance of interest. He placed his napkin on the table and sat back in his chair, much soothed in spirit by an excellent dinner, and prepared to listen to a long catalogue of novel and striking purchases.

"I got—" began Mrs. Steelby, impressively, and paused. "I got," she went on after a moment, checking off the items on the fingers of her left hand, "six monogram handkerchiefs for Ned, a game for Willie and calendar for Sue, a box of notepaper for each of Cousin Harry's children, a book for your sister, a necktie for each of your brothers, and for you—a big, lovely box of cigars!"

For a moment Steelby remained staring at his wife. Then he burst into a roar of laughter.

"Original!" he gasped, between paroxysms. Finally he quieted down and wiped his eyes. "Let's sample that box now, Mrs. Steelby," he suggested.—Chicago Daily News.

THE CHRISTMAS PROBLEM

Written for California Cultivator
By W. M. T., San Bernardino

I want to share my Christmas plans with the readers of the Cultivator, and hope that many others may get as much joy as I have by following some similar solution of the Christmas problem.

At first it just seemed I could not do anything this time, as we all know this has been rather a hard year, but the nearer the time came, I just had to get busy for I could not stand to think of letting the holidays pass without even trying to make some one happy.

So I have been having the nicest time doing my shopping at one "department store", in other words at home. Really, I have never had so much pleasure in preparing Christmas gifts before. I suppose it is because it is all so different and again I am not worrying about the money that I would have spent had I bought all my little gifts, for we all know how easy it is to spend money doing Christmas shopping; it fairly seems to evaporate. Ten and 15 cents, a dollar here and there, and before we have remembered half our friends and relatives we're wishing there never was any Christmas at all.

First I began making little aprons and dust caps; it is really surprising how much good material one has on hand to work with that you don't think of until you begin going through your scrap bags, etc. The many little scraps left from summer dresses and nice pieces of new laces which can be made into caps and aprons are always sure to please our friends.

Next I have written lots of cheerful Christmas letters and have slipped in kodak pictures that my husband took of our pretty little house and of the children. And for my friends and relatives close at home I have been preparing little hanging baskets. I had such a pretty bed of parsley this summer, so I took several five-pound lard pails and painted them white, put in rich soil and filled them with green parsley. I think these will look very pretty hanging in one's kitchen or sitting on the window sill and besides those sprigs of parsley will be much appreciated as a garnish around meat or salad. I also divided some of my pretty ferns and started young ones in flower pots.

This summer I put up so much fruit and pickled peaches, cucumber pickles, tomato catsup and canned sweet grape juice and I am going to wrap the jars in pretty paper and tie with a bit of Christmas ribbon and send to each the thing I know he or she most likes.

I am going to have the family Christmas dinner. There will be 15 in all and I have something planned for every one. Instead of wrapping every package I am putting a card with the name on each gift and hiding them somewhere in the house, so after dinner we may have a jolly time finding them.

I have four boys and they have entered into this plan very heartily. We raised very nice pop corn and we are going to put it in pretty little bags made from some new material and tie with ribbon.

Last year when I received my Christmas packages I put away all the ribbon and stamps that were not soiled, and now I have them to use this year.

You can see what a pleasant time I am having being able to "shop" at home, for really it isn't very pleasant to try to shop down town with a baby and I believe my friends will be just as pleased over these little simple gifts, for I have made or prepared every one myself and lots of love is woven into them.

Just try this plan and see what a happy heart you will have and send some gift to some one who isn't look-

ing for one or whom you think will not be remembered by many. After all it isn't really what we give but the way we give.

Let us all remember that it is the Saviour's birthday that we celebrate, and render thanks unto Him for all the good things we have enjoyed this past year. Wishing you all a Happy Christmas.

CHRISTMAS CANDIES

Written for California Cultivator
By Nita Ferris, Woodlake

One woman who has a large list of acquaintances remembers them all every Christmas with a holly ribbon tied box of home made candies, delicious sorts made by herself. She buys a lot of fancy boxes of all kinds and then starts in to fill them with her candies, and these boxes of confectionery are looked eagerly forward to each year by the recipients. "It's easy to make fancy candies," she said recently, "if one only learns first the art of making fondant, the foundation of all cream candies. I make mine by putting two cups of granulated sugar and a pinch of cream of tartar into a kettle which cooks evenly all over the bottom, and then pour over this one-half cup of water. This syrup must boil without being stirred until it will form a soft ball when dropped into ice water.

"When it has reached this point I turn it out on a large platter or, better still, a marble slab (I have the top of an old marble topped table) which has been slightly greased. Watch carefully and when it is cold enough to bear your fingers in it stir rapidly with a wooden spoon until a thick, creamy mass is formed; then dust the bread board with pulverized sugar, turn the fondant on this and knead the mass as you would bread until it is soft and smooth. It is best to let the fondant stand in a covered glass bowl for three or four hours before beginning to make your fancy candies, your chocolate creams, nut and coconut rolls."

Candied fruit added to the fondant makes delicious confections. Melt one cup of the fondant slightly over the fire and add to it a tablespoon each of finely cut citron, chopped almonds, candied cherries and half a teaspoon of vanilla. Put this into a pan and add a weight to press into shape. Let it stand 24 hours and cut into squares.

Cocoanut balls are made by rubbing into the fondant as much shredded cocoanut as it will hold. If desired it may be dipped into melted chocolate. It is best to use the bitter chocolate, and when dipping fondant balls, or ovals, as you may have shaped them, use a knitting needle inserted into one end, as they will then be dipped evenly. The best chocolate drops are made by rolling an almond nut in a small ball of the fondant and dipping into the chocolate.

Another fine candy is made by taking small balls of the fondant flavored with vanilla and filled with chopped cherries and rolling them in maple fondant, melting slightly.

This maple fondant can be made in the same way as the white fondant by using two cups of brown sugar, one cup of maple syrup, one cup of hot water, a pinch of cream of tartar. The only difference in the process being that maple fondant requires longer beating to make it creamy. All sorts of flavoring may be added to the white fondant, rose, peppermint, lemon, almond, etc.

If one does not care to make fondant there are other Christmas candies made easily and quickly. Panoche is nice and is made by stirring one pound of brown sugar and one half cup of cream until it boils and forms a soft ball when dropped in cold water. As you take it from the fire drop into it a pint of pecan nuts, stirring until the sugar is granulated.

Nuts coated with syrup are made by boiling a cup of sugar and a quarter of a cup of water until brittle when dropped in water. Flavor with lemon or vanilla. Heat walnuts, almonds, pecans or peanuts—but do not brown—and dip them quickly into the heated sugar by means of a darning needle.

Nut and fruit confections are made by chopping half a pound each of dates and preserved cherries, a pound each of figs and English walnut meats, mixing thoroughly and rolling

the mixture into a thin sheet on the bread board, covering the board first with pulverized sugar. Cut out with a small cutter and roll in sugar.

Candied violets and rose leaf petals are easy to make and delicious, as everyone knows. Large raisins seeded and filled with blanched almonds, English walnuts and candied cherries and then the stuffed raisin put into another seeded raisin are tempting. Dates may also be treated in the same way.

One thing more should be added and that is that when you are making white or maple fondant be sure when the boiling process is on that the crystals which form on the side of the kettle are wiped off with a sponge or soft cloth, for if they fall back into the boiling syrup they cause granulation and spoil the candy.

A WOODSY CHRISTMAS BOX

The most attractive Christmas display I have seen this season is in the window of a great storeroom which has stood empty for many months. During this holiday season it is occupied by a firm which supplies Christmas greenery to the big stores. Back as far as you can see the room is heaped with fir and redwood boughs, with tubs of our California holly, and pine cones, big, little and middle sized. Oh, the smell of the fir and the pines! It is wafted out of the open door to the electric car as I pass morning and evening. Last night I walked blocks and blocks just to stand in front of that store and sniff!

Isn't there a hint here, for Christmas boxes, to those who are lucky enough to live near the hills or mountains?

THE CHRISTMAS DINNER

Written for California Cultivator

Tiny Christmas trees decorated with baby candles and tinsel are the most charming of Christmas table centerpieces. If a branch of a real tree is not obtainable a very satisfactory tree—of paper—may be found at the ten cent store. These come set in a spool-shaped standard with red berry-tipped boughs and may be decorated with bits of tinsel, odds and ends of bright, left-over ribbons from last Christmas, bits of cotton batting, etc.

Last year I used these very extensively in my gift giving. One of these tiny trees was placed in a five or ten-cent basket and the basket filled with fruit, nuts and candy. Some of the baskets were large enough to hold two to four glasses of jelly and around these were heaped the nuts and candy. The dressing of the trees and the filling of the baskets brought a delightfully Christmasy feeling, and the recipients, I know enjoyed them as much. The little baskets with their goodies under the glamor of the Christmas tree served as centerpieces on the various tables through the holiday week.

For a long Christmas dinner table—and that is the kind we all want at Christmas—three of these tiny trees might be placed down the center. If greens are laid beneath them the candles may be lighted when dessert is brought in and the housewife feel no fear of the dropping wax on her best tablecloth.

Here is a suggestion for a decoration, easy to make, that will delight the children, young and old: An attractive table decoration for Christmas morning may be made by covering small vanilla wafers thickly with boiled icing and in the center of each stand an animal cracker upright.

THE HOUSEHOLD CONTESTS

The prize winner this month is W. M. T., who does not wish her name to appear. We wish her modesty had not prevented us from publishing her solution of the Christmas problem under her own name, for surely she has solved it in a charming, practical and most Christmasy spirit, and the article in which she tells of her Christmas work is one to be proud of.

The second prize goes to Nita Ferris of Woodlake who tells how one woman makes her friends happy with pretty boxes of candy of her own manufacture. With this suggestion

Continued on Page 607



33 Different Styles
High Shoes
Low Shoes
Button Shoes
Lace Shoes
All Solid Comfort

Take No Substitutes

Don't let anyone persuade you to accept an imitation of the genuine Martha Washington Comfort Shoe. No other shoe will give you so much real comfort and lasting wear.

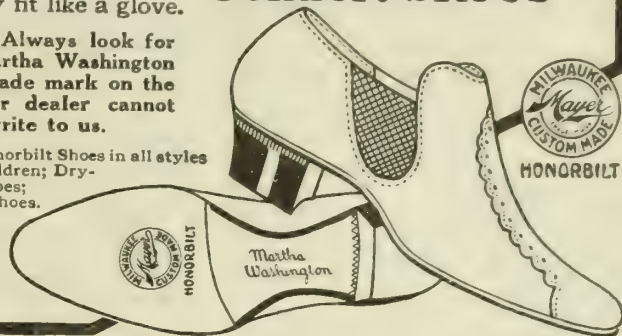
Mayer

Wear these great shoes and free yourself from the annoyance of tired, aching, burning feet. They fit like a glove.

WARNING—Always look for the name Martha Washington and Mayer trade mark on the sole. If your dealer cannot supply you, write to us.

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Bulbs

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A "Gift Box" of fine Hyacinth, Narcissus, Crocus and other Bulbs, is a novel and appropriate gift.

The brilliant blooms will be a pleasant remembrance long after Christmas is past. Bulbs are easily grown indoors or out. The quickest way to settle the "gift question", Christmas boxes of Bulbs ready to mail, 50c each. Postage 10c extra.

REGULAR COLLECTIONS

These collections contain such bulbs as Hyacinths, Tulips, Narcissus, and Crocus.

Send in your order early before our stock becomes broken.

Collection "A"—50 bulbs of 7 different varieties.....\$1.00

Collection "B"—120 bulbs of 11 different varieties..... 2.00

Collection "C"—153 bulbs of 14 different varieties..... 3.00

SEND FOR OUR 1915-16 BULB CATALOGUE TODAY. IT'S FREE.

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LOS ANGELES, CALIFORNIA



San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Dec. 15, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 cents above following quotations:
Creamery Extras28
Firsts26

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies15
Arizona Longhorn17@17½
California Fresh17
Eastern Cheddar20@21
Domestic Swiss23
Eastern Daisy19
Eastern Twins18½
Imported Swiss40
Longhorn19½
Oregon Triplets18@18½
Tillamook19@19½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Fresh Ranch, case counts34
Candled36@38
Northern Fresh Extras, f.o.b. S. F.43½
Prices to producers:
Hens, lb.15@17
Roosters, old9
Broilers, lb.25
Fryers18
Roosters, lb.14
Turkeys16@19
Ducks15
Geese12
Squabs, doz.10@

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:
Hogs, 175 to 200 lbs., per cwt.6.25
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug65
Rurals1.30@1.35
Idaho Russets1.60@1.65
Lompoc1.85
Northern Burbanks1.55@1.75
Salinas1.85@1.90
Seed Potatoes:
Early Rose2.15@2.25
White Rose1.75@1.80
American Wonder2.00@2.10

ONIONS

Wholesale selling price:
White Globe, lug1.00
Brown Globe, cwt.1.75
Garlic1.15
Sets—
White, lb.9
Yellow, lb.8

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.25@1.35
Beets, doz.35
Beans—
Wax8@9
Limas7@8
Green8@9
Brussels Sprouts, lb.9@10
Cabbage, sack1.25
Northern, lb.2
Carrots, doz.30
Cauliflower, doz.40@50
Celery, doz.75
Chicory, doz.40
Chives, doz.1.00
Corn, lug65
Cucumbers, Hothouse, doz.50@1.75
Egg Plant, lb.6@7
Escarole, doz.90
Horseradish, lb.10@11
Leeks, doz.40
Lettuce, doz.35
Mint, doz.40
Okra, lb.10
Onions, Green, doz.20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone10
Peppers—
Bells6@7
Chili, lb.6@7
Pimientos, lb.6
Rhubarb—
Rhubarb1.10
Spinach, doz.20
Squash—
Crookneck, lug.63
Hubbard, lb.1¼@1½
Small Cream45
Summer, lug.1.00
Tomatoes65@75

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower1.10@1.25
Jonathans1.70@1.90
King David1.50@1.65
Pearlains, White1.00@1.25
Pearlains, Red1.10@1.15
Yellow Newtown Pippins1.10@1.15
Bananas, lb.4
Berries—
Strawberries, basket10@15

Blackberries, basket12
Raspberries, basket13@15
Casabas, crate2.50
Cranberries, bbl.11.75@12.00

Figs—
Blk. box1.10@1.25
White85@90
Grapes—
Malagas, lug.1.65
Cornichon, lug.1.35
Red Emperor, lug.1.75
Pears, Bartlett, packed box3.00
Winter Nelis, lug.1.50
Persimmons, lb.6@7
Pineapples, lb.6@7
Pomegranates, half orange box1.50

CITRUS FRUIT

Wholesale selling price:
Lemons2.00@2.50
Juice Lemons1.25
Grapefruit, Seedless4.50@5.00
New2.75
Limes, basket1.00
New Navels2.50
Tangerines, half box2.50
Valencias4.00@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes 8½@9¼
Apricots9¼@15
Peaches6@7½
Pears11
Prunes, fancy pack5½@15

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	14.00
No. 2	12.00	10.60
Buds	20.00	17.50
Jumbos	18.50	16.60
See almond quotations by Association under San Francisco.		
Peanuts—		
California, Raw	5@6	
Japan	5½@6	
Eastern	6¼@7	
Chinese	5	
Pecans		17

HONEY

Wholesale selling price:
Comb, Fancy Water White18
Extracted Water White7½
Middlings1.85
White7
Light Amber6
Beeswax25@26

BEANS

Wholesale selling price:
Limas5.40@5.50
Lady Washington7.00
Pinks5.50
Black Eyes4.00
Lentils17.00@20.00
Manchurian Reds4.00@4.25
Small White6.75
Garbanzos5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley14.00@17.00
Wheat Hay12.00@16.00
Tame Hay16.00@20.00
Alfalfa12.50@15.00
Volunteer8.00@10.00
Straw6.00@7.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.00
Corn, White2.10
Wheat2.10@2.15
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.50
Barley Seed1.65
Barley, Hulled1.95
Kaffir1.75
Milo1.60
Rye2.00
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal1.25
Bran, Heavy1.55
Alfalfa Molasses, per cwt.1.35
Beef Scraps3.05@3.15
Beet Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.05
Cracked Wheat, cwt.2.25
Cotton Seed Meal1.90

Bone, Green1.85@1.95
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.60
Rolled Oats1.80
O. & W. Middlings1.85
Feed Meal2.10
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.30@2.40
Best Chick Feed2.80@2.90
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Dec. 14, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:
Fresh Extras28
Prime Firsts25
Firsts24

CHEESE

Wholesaler to retailer:
Young Americas16½
California Flats14½@17
New York Cheddar19
California Cheddar17½
Oregon Twins17
Oregon Young America, fancy16

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh Extras44
Select Pullets34½
Hens, lb.13@16
Fryers19@21
Broilers23@27
Roosters—
Young18@19
Old10@11½
Squabs3.00@3.50
Turkeys—
Live Young19
Live Old17@19
Dressed, Young24@26
Dressed, Old22@24
Ducks12@13
Geese, pair2.50@3.00
Belgian Hares—
Live8@9
Dressed10@11½

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6½
Cows and Heifers3@5½
Calves, lb., live wt.6@9
Hogs4@6½
Wethers6@6½
Ewes5@5½
Milk Lambs, lb.7½@7¾

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.60@1.65
Delta Burbanks, cwt.1.00@1.45
Sweets1.20@1.30
Oregon1.25@1.60
Idaho Rural1.20@1.30
Idaho Russets1.25@1.60

ONIONS

Wholesale selling price:
Onions, cwt.65@95
Garlic, lb.12½@15

VEGETABLES

Wholesale selling price:
Artichokes, doz.50@1.00
Beans—
String, lb.4@10
Limas, lb.5@7
Wax, lb.4@7
Brussels Sprouts, lb.3@4
Celery, crate2.25@2.50
Cucumbers, doz., hothouse50@65
Egg Plant, southern, lb.5@8
Lettuce, crate90@1.25
Okra, lug.40@65

WEATHER CONDITIONS

For the Week Ending December 11, 1915

Report from the various California Stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

Rainfall Data

	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Eureka	1.44	10.50	12.20	64	40
Red Bluff	1.15	7.12	7.04	56	42
Sacramento	.10	2.68	4.71	62	40
San Francisco	.07	4.42	5.25	60	48
San Jose	.02	3.05	3.97	64	38
Fresno	.00	2.56	2.48	72	38
Independence	.00	.25	2.40	62	40
San Luis Obispo	.01	2.60	4.17	74	40
Los Angeles	.00	2.70	2.95	80	48
San Diego	.00	1.22	1.74	72	46

Temperature Data

Peas, Southern5@9
Peppers—
Chili, lb.2@3
Bell, box40@55
Rhubarb, box1.00@1.25
Squash—
Summer, lug40@60
Cream50@65
Hubbard, sack65@75
Tomatoes, lug, local25@50

FRESH FRUIT

Wholesale selling price:
Apples—
Newtown Pippins65@1.00
Pearlains, White65@85
Jonathans60@1.00
Bananas, Hawaiian, bunch1.00@1.75
Cranberries, Eastern, bbl.11.00@12.50
Oregon, box3.50@3.75
Pears—Winter Nelis, box1.00@2.00
Cooking50@1.00
Persimmons, box50@1.25
Pineapples, doz.1.25@2.00
Pomegranates, half orange box75@1.00
Quinces, box1.00@1.50
Strawberries, chest4.00@5.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit—Seedlings—New2.75@3.00
Lemons1.50@3.50
Lemonettes1.50@1.75
Limes, Mex., cs.5.50@6.50
Navels, new1.50@2.75
Tangerines, box1.50@2.00
Valencias2.25@4.50

DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis in carload lots, 1915 crop: Santa Claras, 30-40s, 7c; 40-50s, 6c; other sizes, 5@5½c. All outside sections ¼c lower.
Other Fruits. Stand-Extra
50-lb. boxes ard. Choice Choice Fancy
Peaches 4½c 5½c 5½c 6 c
Pears 6½c 8 c 8½c 10½c
Apples 8 c 8 c 8½c 9 c
Apricots 9 c 10½c 10½c 11½c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5½c; 4-crown, 6c.
The above prices are for November, and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.

Nonpareil15
IXL13½
Ne Plus13
Drake's11
Langueocs11
Peanuts—
Unpolished3¼@4¼
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.90@5.00
Pink4.70@4.75
Black Eyes3.75@4.00
Cranberry, California5.50@5.60
Small White6.00@6.10
Garbanzos4.25@4.50
Large White6.20@6.30
Bayou5.50@5.60
Manchurian Speckled Bayous4.00@4.25
Red Mexican5.15@5.30
Red Kidney8.00@8.25
Horse Beans2.00@3.50

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White7@8
Light Amber4@5½
Dark Amber2
Beeswax25@28

RICE

Price net to growers at shipping points.
California Waterbune, lb.2@2.15c

HOPS

1915
Wholesale selling price:
Sacramento Valley9@10¼
Sonoma-Mendocino10½@12
Oregon-Washington10@12

HAY

Under date of December 11, Scott, Magner & Miller say:
The receipts of hay for the past week were 2423 tons, a trifle less than the preceding week, 2861 tons.

The market continues in about the same condition. The receipts being moderate. The market has a firm undertone which is especially evident in fancy grades of wheat or red oat hay. These two commodities are selling "to arrive" at top quotations.

From snap tallies taken by various dealers of the amount of stock available it is generally conceded that there is probably sufficient to carry through to the new crop, though large quantities are being consumed in the interior for feed purposes at this time. As a consequence, we look for a firm market throughout the

spring months.
Interior trade continues good and the export trade presents a normal appearance. Trade with the south continues as heretofore and now that the race track has opened at Tia Juana we look for larger shipments in that direction.
Demand for alfalfa is exceedingly good. There is no change in straw.
We quote the average wholesale prices for hay in carload lots on today's market as follows:
Fancy Wheat Hay (lt bales)...17.00@18.00
No. 1 Wheat or Wheat and Oat12.00@15.00
No. 2 Wheat or Wheat and Oat10.00@11.50
Choice Tame Oat15.00@16.50
Other Tame Oat10.00@14.50
Wild Oat8.00@11.50
Alfalfa10.00@14.00
Stock Hay6.00@8.00
No. 1 Barley Straw25@40

GRAIN

Alfalfa Seed	16@17 1/4
Wheat, Cal. Club	1.60@1.70
Blue Stem	1.80@1.82 1/2
Barley Feed	1.25@1.30
Shipping and Brewing	1.30@1.32 1/2
Corn, Eastern Yellow, old	1.67@1.68
New	1.55@1.62 1/2
Corn, Egyptian White	1.47 1/2@1.50
Oats, Red, Feed	1.27 1/2@1.50
Oats, Red, Seed	1.40@1.50
Oats, White, Feed	1.37 1/2@1.40
Oats, Black, Feed	1.50@2.00
Millet	2 1/2@3
Rape	2 1/2@3
Flaxseed	5@5 1/4
Rye	1.55@1.57 1/4

FEED STUFF

Wholesale prices

Alfalfa Meal, car lots	16.50@17.50
Bran, ton	25.00@26.00
Feed Cornmeal	33.50@39.00
Cracked Corn	33.50@39.00
Rolled Barley, ton	27.50@28.50
Middlings	31.00@33.00
Shorts	26.00@27.00
Oilcake Meal	37.50@43.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 15, 1915.

The orange market is holding up in remarkably fine condition and all the fruit offered is being taken, prices ranging around \$3.00 delivered. Central California has shipped more than 60 per cent of her crop and it is thought January 1 will see practically all of the navels cleaned up. Present indications are that earlier estimates as to output were perhaps 15 per cent too high. Lemon market still remains firm.

Shipments

Shipments of oranges from Southern California to date since November 1, 1915, 878 cars, lemons 557, total 1435. Last year same date, oranges 684 cars, lemons 410, total 1094. From Central California this season; oranges 2368 cars, lemons 50, total 2438. Same date last season; oranges 3053, lemons 74, total 3127. From Northern California this year oranges 375. Last year same date 397.

NEW YORK, Dec. 13.—Twelve cars navels, one car Arizona navels and five cars California lemons sold. Lower account heavy offering of navels; firm on lemons. Raining.

NAVELS—

Earlibest, C. C. Ex.	3.55
Bell Cove, C. C. Ex.	3.20
Heart, L.M. Assn.	3.30
Kaweah Chief, C. C. Ex.	3.75
Basket, C. C. Ex.	3.25
Hetch Hetchy, imp, L.M. Assn.	2.70
Heart, L.M. Assn.	3.40
Exeter, C. C. Ex.	2.90
Los Flores, Associated O. Dis.	2.80
Signal, Stewart F. Co.	2.95
El Toro	2.30

ARIZONA NAVELS—

Arizona Desert	4.75
Cactus	3.15

HALF BOXES—

Desert	2.50
Cactus	1.90
Tonto	1.60

CALIFORNIA LEMONS—

Silver Lemon	3.80
Prairie Chicken	3.75
Commercial	3.65
Whittier	4.10
El Dorado	3.85
Pet	4.00
Arab	3.80
Pup	3.75
Dck	3.60

PITTSBURGH, Dec. 13.—Four cars sold. Market is easier on oranges and lemons.

VALENCIAS—

Palermo, S.C. Ex.	2.10
State, imp, T.C. Ex.	2.50

LEMONS—

Whittier, S.T. Ex.	3.35
Pico	3.00
La Puente	3.00
Cycle, F.C. Ex.	3.05
Alamo	3.20
Oriole	3.10

CLEVELAND, Dec. 13.—Six cars sold. Market weaker on oranges; steady on lemons.

NAVELS—

Mars, Amer. F. Dist.	3.05
Signal, Stewart F. Dist.	2.85
Basket, C.C. Ex.	3.00
Tulip, T.C. Ex.	2.70
Gold Dredger	2.95
Kaweah Chief, C.C. Ex.	3.30
Strathmore, T.C. Ex.	2.95

LEMONS—

Whittier, S.T. Ex.	3.90
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BOSTON, Dec. 13.—Ten cars sold. Market is easier on all varieties.

NAVELS—

Bluemount	3.15
Highgrade, Sutherland-Coons	2.60
Forget-me-not, T. C. Ex.	3.10
Greenmount	2.90
Goodone, Sutherland-Coons	2.55

Strathmore, T.C. Ex. 3.15

LEMONS—

Aristocrat, S.T. Ex.	3.80
Quail, O.K. Ex.	3.60

CINCINNATI, Dec. 13.—Two cars sold. Market is steady on oranges and lemons.

NAVELS—

Forget-me-not, T.C. Ex.	3.10
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LEMONS—

Pet, S.D. Ex.	3.65
Pup	3.30
Duck	3.00

PHILADELPHIA, Dec. 13.—Four cars sold. Market steady on oranges; lower on lemons.

NAVELS—

Maljan Blue	3.00
Pioneer, imp, D.M. Ex.	3.25
Pioneer, L.M. Ex.	3.45
Hetch Hetchy, L.M. Ex.	3.00

LEMONS—

La Habra, S.T. Ex.	3.90
Reliable	3.60
Standard	3.45
Quail, O.K. Ex.	3.65

ST. LOUIS, Dec. 13.—Five cars sold. Market is steady on oranges and lemons.

NAVELS—

Mallard, Randolph F. Co.	2.60
Paul and Virginia, C.C. Ex.	2.85
Craig-Y-Nos, C.C. Ex.	2.70
California (Mid.), T.C. Ex.	2.65

LEMONS—

Arab, S.D. Ex.	3.25
Pup	2.70
Tunnel	3.25
Patio	3.05
Urchin	2.95
Pirate	2.70

CHICAGO, Dec. 13.—Strawberries are arriving in ample quantity, but drag under slow demand. California, 10@20c per pint and small trays of six cups or two boxes, 50@60c; Floridas, 50@60c per quart. Cranberries, barrels, 7.50@9.50. Oranges, boxes, California navels, \$3.00 @3.75; Floridas, \$2.00@3.40; common and green, \$1.50@1.75; tangerines, straps, two boxes, \$2.00@3.50; Satsumas, half boxes, \$1.50@1.85. Apples, western, boxes, \$1.35@2.75; five varieties offered. Grapes, California Emperors, 50-pound drums, \$3.50@4.00. Pears, boxes, 50 pounds, Buerre de Anjou, \$4.00@4.25; Winter Nelis, \$2.75@3.00. Pomegranates, half orange boxes, \$2.00. Grapefruit, boxes, fancy Indian River, \$3.00@3.25; Florida, \$2.50@3.00; Isle of Pines, \$1.75@2.25. Lemons, boxes, fancy California, \$4.00@4.25; choice, \$2.50@3.75.

HOUSEHOLD CONTESTS

Continued from Page 605

she gives careful instructions as to how to make many different candies.

January Contest

We have received request that soups be made the subject of the next recipe contest in January.

For the best will be given \$2.00 in cash; for second best \$1.00. All published will receive three months' extension of subscription to the Cultivator if such extension has not already been granted this year.

With your recipe send name of member of your family now subscribing that the extension may be properly credited, or of course a new subscription may be started. Please write on one side of paper only.

All manuscript should be mailed to Household Department, California Cultivator, Los Angeles, and should be in this office by the morning of Thursday, January 13. The recipes will appear in the issue of January 20. With your recipe we will be glad to have you send suggestions for future contests.

SOIL TESTING MACHINE AT LAST

A little device of interest to every farmer or agriculturist has been invented by Dr. M. O. Reiche, a graduate of the Dresden and Munich, Germany, agricultural colleges, and until recently assistant director of the agricultural experiment station at Munich, Germany. Dr. Reiche calls it the "Standard" Soil Tester, because the testing of the soil is all done by one standard, viz., 20 grams. By using the "Standard" Soil Tester it is claimed that one is able to determine whether soils are acid or not, and to what degree; to ascertain the carbonate contents available in the soil to a close percentage, and to distinguish whether the disclosure is of lime or of black alkali; also to determine the amount of humus in the soil.

When the amount of lime or humus, if any, in the soil is established, it gives the assurance whether the soil is in fertile, workable condition or not, and whether it is acceptable to develop further fertility by the addition of fertilizers of different kinds, based on the character of crops to be raised. Unless soils have a sufficient amount of lime and humus, they are not able to properly assimilate the fertilizer and money spent for fertilizer, without a knowledge of the lime and humus available in the soil, may be spent uselessly.

Although it has been on the market less than a year, it is reported that many agricultural schools are already using the "Standard" Soil Tester in their demonstrations to pupils and in their laboratories and in every test the "Standard" Soil Tester has been found very satisfactory.

As the expense of testing the soil with this machine is merely nominal, being only a small fraction of a cent a test, its introduction will be watched with interest, by every rancher.



Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.
Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115 1/2 N. Broadway, Los Angeles.

Homestead Right

If a man files on a piece of land and in three or four months decides he does not want it and sends it back to the government has that man lost his homestead right?—Subscriber, Anaheim.

Under the recent act, as heretofore appearing in this column, he is entitled to take up other land under the homestead act.

Mortgages

I have a \$1000 mortgage on a house and lot, on which I have received no interest for a year. Can I give the party another year's time to pay so as to give him a chance to sell before I foreclose, or would that outlaw the debt? If I can, must a paper be made out to that effect? Also, another investment, the papers are in a trust compny's hands, no interest having been paid. What is it liable to cost me to foreclose? I have not much money and it worries me. About what will a lawyer charge me?—Subscriber, San Diego.

Statute of limitation upon notes made within this state is four years from the date on which the payment is due, so that you would be entirely safe in allowing an extension of one year. Upon trust deeds the fees of the trust company are usually graduated with reference to the amount due under the trust deed. In order to find out the cost you should write to the trust company holding the deed. It is very frequently the case that parties give deeds upon a small payment and clear the obligation up in that manner. There will be no attorney's fees upon the foreclosure of the deed, the entire matter being attended to by the trust company, and the amount which you paid would be added to the amount due under the trust deed and upon the sale of the trust deed the net amount received or for which the property was bid in is credited against the note and you are then entitled to bring suit against the maker of the note for the balance due thereunder.

Agent's Liability

A is working on a salary for a manufacturing company. He travels and appoints local agents. If A follows instructions from the company in making contracts with all local agents can B, an agent appointed by

A, hold A for damages or for salary, or hold A liable in any way, in case of a breach of contract by the company in their dealings with B? Would a showing of good faith on A's part have any bearing on the case?—Subscriber.

An agent who makes a contract as an agent incurs no personal liability, but in the usual case it is just as though the principal himself was present and signed, so that the agent in this instance would very probably have no obligation.

Collecting Wages

One year ago a housekeeper was engaged at \$50 per month. Four months later she was discharged. The employer has never paid any wages although she has promised to do so from time to time. What steps should the employe take to collect her wages? Is she entitled to wages for the time since her discharge until she is paid in full?—Subscriber, Nestor.

A housekeeper is entitled to bring action against the employer for the term she worked that has not been paid. Unless there was a contract for work for a definite period of time and the employer has broken said contract without fault upon the part of the employe the employe could recover no larger amount than for the actual time for which she was employed.

Yerxa's PRUNE TREES

We are making a specialty of Prune and Plum trees budded on Myrobolan roots imported by ourselves from France. Buds selected from the heavy bearing trees in our own orchard.

Prices on application.

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Facilities for 4% long term loans. On City and Farm Real Estate. Twelve years to pay. Repayable monthly, quarterly or semi-annually. The best and safest investment contract on the market. Investigation invited. Representatives wanted for County Agencies.

General Agent, 1014 First Savings Bank Bldg., Oakland, Cal.

Walnuts Brief History of Concord and Wiltz (San Jose, Mayette)

Concord originated as a seedling of a tree imported by Felix Gillet. The Leonard Coates Nursery Co. obtained grafting wood of Eli I. Hutchinson of Concord; propagated and disseminated it solely for six years, after naming it "Concord". This variety is now acknowledged to be one of the best, one crop having been sold for 24 cents a pound to the Walnut Growers' Association. Wiltz is also a seedling of a tree imported by Gillet, and propagated first by Mr. Wiltz. The Leonard Coates Nursery Co. also first placed this variety on the market, propagating it solely for some years by arrangements made with Mr. Wiltz, and have their own bearing orchard of trees propagated by Mr. Wiltz, himself.

We have both budded and grafted trees of these varieties, the Vrooman, Franquette, and others. Eureka should be further tested before planting largely; it blighted badly this year.

Our Prices Are Right Our Stock Is Right

OUR "COATES" FRENCH PRUNE HAS PROVED A WINNER.

Landscape Gardening a specialty. Will furnish plans and estimates for any ornamental planting.

Write us for further information. Remember we have the stock and we grow it ourselves.

"We Grow Everything Worth While".

Leonard Coates Nursery Co. Morganhill, California



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Tobacco Co.

Prince Albert puts the whole smoke world at ease!

Gets down to trick-taking on the first-few-fire-ups, extracting smiles of satisfaction and peaceful content where frowns once grew thick! For, men find a bunch of jimmy-pipe-joy and cigarette-makin's-happiness in Prince Albert! Because, the harder they smoke it, *the truer it proves!* The patented process fixes that—and removes bite and parch!

PRINCE ALBERT

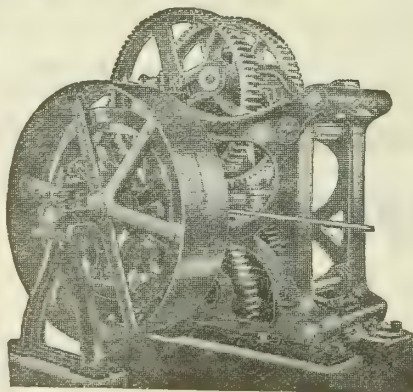
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certainly makes it worth your while to get pipe-broke or cigarette-broke! *It's so kindly to your tongue;* it has such a smokable-way-about-it!

Life's too short and time's too speedy to worry with the tobacco question. You get going down the trail for a supply of P. A. You'll locate it at any store that sells tobacco. It awaits your howdy in toppy red bags, 5c; tidy red tins, 10c; handsome pound and half-pound tin humidors and in that joy's crystal-glass pound humidor with sponge-moistener top that keeps P. A. fit-like-a-thoroughbred!

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For downright dependability—efficient work—high pressure—ease and economy of operation—low cost of maintenance—strength—durability—and all round satisfaction the Bean Giant is in a class by itself. Supplies 2 to 4 lines of hose and has a capacity of 7 to 12 gallons a minute. Good for 4 to 8 acres a day.

Thirty years' experience in the building of spray pumps is back of this outfit.

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Every part is produced right here in the Bean factory—with the exception of the Novo engine and the Novo is used because a better sprayer engine can't be built. TWENTY-ONE DISTINCTIVE FEATURES are incorporated into the making of the Bean Giant—Patented Pressure Regulator, Porcelain-lined Cylinders, Rustless Ball Valves, Bean Patented Refiller, Truck with Rocking Bolster, One-piece Steel Frame, and many others.

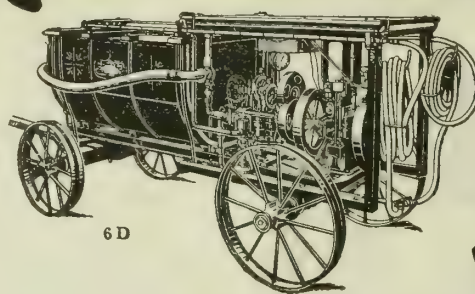
We handle a complete line of smaller power sprayers and hand pumps. Before you invest in any kind of a Sprayer

WRITE FOR NEW CATALOG

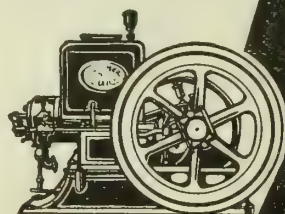
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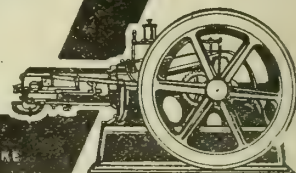
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ARE USED ON 85 PER CENT OF THE BIG ORCHARDS OF THE NORTHWEST. WHY? BECAUSE GROWERS FOUND THE HARDIE WAS A BETTER SPRAYER THAN ANY OTHER.



HAND PUMPS
NOZZLES
HOSE
5 SIZES
POWER RIGS

Efficiency is Higher
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Beware of the "Store Made" Rig.
Hardie Makes Nothing But Sprayers.

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The winter number of the Yuba Bulletin will be ready for distribution about January first. To insure your being well informed on the tractor situation, send your name to be placed on our mailing list.

The Yuba Construction Co.

Department B-20
433 California Street, San Francisco, Cal.

CALIFORNIA CULTIVATOR

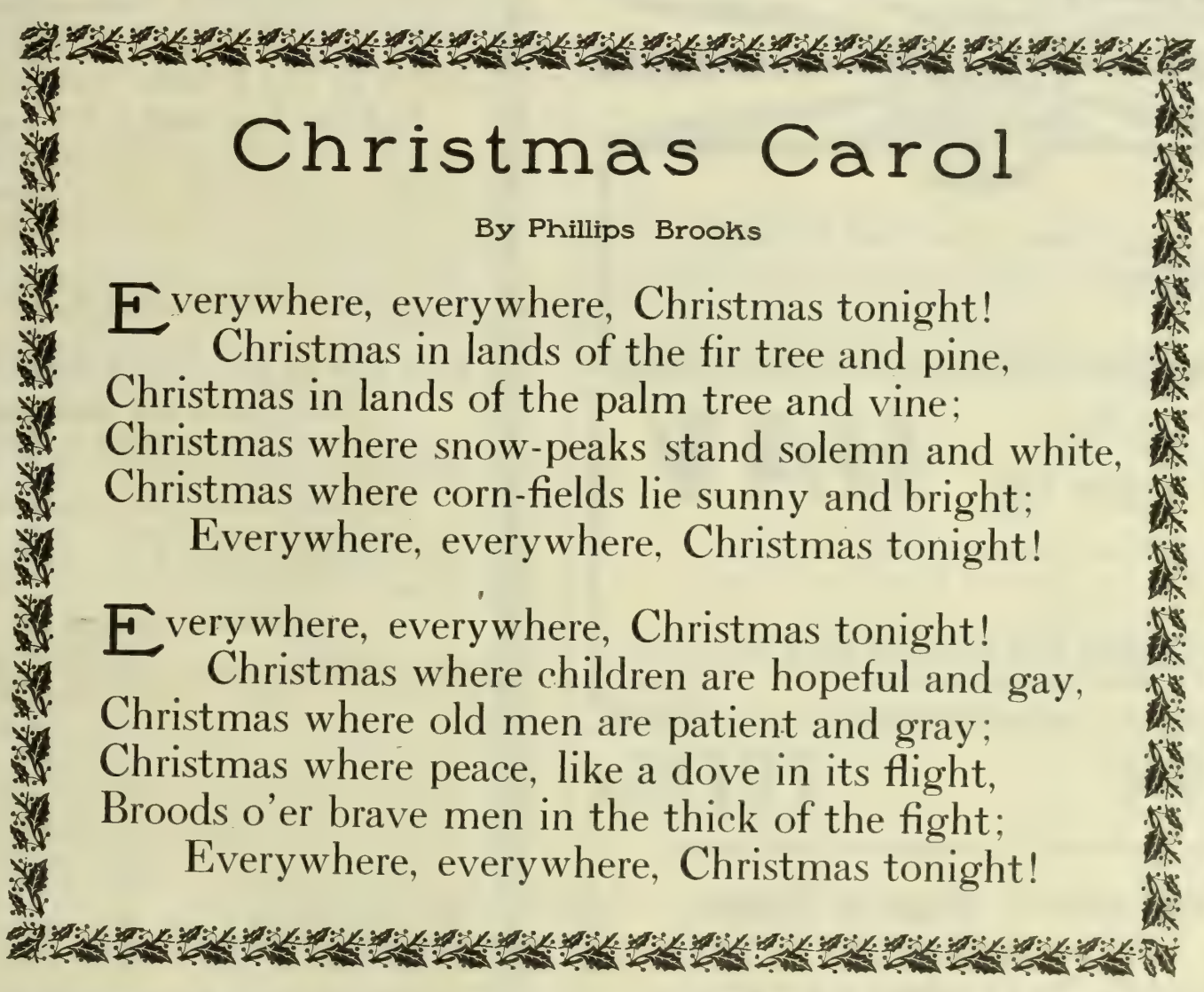
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

December 23, 1915

SAN FRANCISCO



Christmas Carol

By Phillips Brooks

Everywhere, everywhere, Christmas tonight!
Christmas in lands of the fir tree and pine,
Christmas in lands of the palm tree and vine;
Christmas where snow-peaks stand solemn and white,
Christmas where corn-fields lie sunny and bright;
Everywhere, everywhere, Christmas tonight!

Everywhere, everywhere, Christmas tonight!
Christmas where children are hopeful and gay,
Christmas where old men are patient and gray;
Christmas where peace, like a dove in its flight,
Broods o'er brave men in the thick of the fight;
Everywhere, everywhere, Christmas tonight!



A Merry Christmas to Each and All

Experience is an

all important factor in the manufacture of Orchard Sprays. When experience is combined with the best obtainable materials and a thorough knowledge of the proper proportions which are most effective in controlling orchard pests, the result is Orchard Brand Spray Material.



ORCHARD BRAND Lime Sulphur Solution, Atomic Sulphur and Bordeaux Mixture are uniform and of proper consistency, dependable in quality and give results.

Crude Oil Emulsion and Miscible Oil are especially prepared for killing scale insects and aphids eggs.

ORCHARD BRAND Arsenate of Lead Paste is a standard poison for killing chewing insects.

When writing our Free Information Bureau, give the age, number and kind of trees and describe fully the pest which you wish to control.

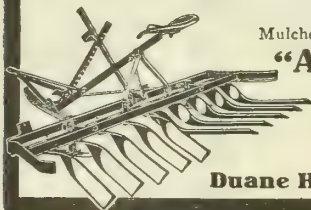
State quantity and kind of material when ordering.

The General Chemical Co.

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destroys all weeds, cutting deep as desired, and tills perfectly. Its knife edges, presented to the ground, at a slicing angle, make draft easy. Foot Lift Lever clears off the weeds and lifts the knives for transportation. 5 sizes—cutting 5 ft. to 12 ft. wide. Write for free book, now. Get every weed, quicker and cheaper, with the "Acme."

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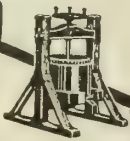
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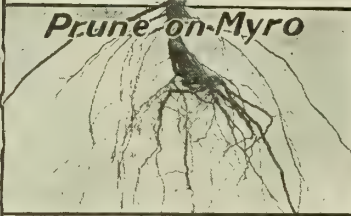
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is our
guarantee"

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Insure You
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They Insure You
A Good Stand—
That's What You
Want**

Prune-on-Myro



These are the kind of roots our foothill grown trees have, peculiar only to our foothill location—note how fibrous and well branched—for good roots, freedom from root knot, disease and hardness, foothill grown trees have no equal.

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You know now the varieties you intend to plant. Give us a list of your wants and we will quote you an itemized estimate of their cost giving you the benefit of the special prices and terms we make to the early buyer. We will mail you also our catalogue giving you accurate descriptions and recommendations as to each variety and useful information.

Write us for advice giving us the particulars of your location and the varieties you desire to plant. Our twenty-five years experience as fruit growers, fruit shippers and nurserymen is yours for the asking.

Every Tree We Sell is True to Name and Behind Each Tree is Our Guarantee

All our trees are foothill grown—our buds are selected for propagating from parent trees having the best record for quality of fruit and productiveness.

This Makes Every Tree a Pedigreed Tree

There will again be a shortage of our foothill grown stock so don't wait—write us now—advise us as to your wants—place your order for our foothill grown stock while the assortment is complete—those who wait are usually disappointed.

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PRUNES
French, Imperial, Robe de Sargeant, Sugar and Standard on Myrobolan root; also on Peach root.

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Beauty, Formosa, Climax, California Blue, Diamond, Wickson, Gaviota, Kelsey, Grand Duke, Hungarian and all other varieties—on Myrobolan, Peach and Almond root.

Our assortment is complete in all other varieties of fruit trees and vines—write us now concerning your wants.

Bergtholdt's Special Selection for Home Orchard \$3.95
This is an opportunity to get 10 fine trees of choicest varieties of fruit delivered freight prepaid for only \$3.95. You can make your own selection or leave it to us and we will send you ten best grade 4/6 ft. deciduous fruit trees including one grafted walnut. Write for our list of combination offers for home planting and our free book on California fruits. Address Box B

SILVA-BERGTHOLDT Co.
NEWCASTLE -- CALIFORNIA

California Cultivator

Rural Californian combined with California Cultivator

Vol. XLV No. 26

LOS ANGELES: THURSDAY, December 23, 1915

One Dollar Yearly

Pruning Deciduous Fruit Trees

Written for California Cultivator by Leonard Coates

NO doubt the theory and practice of pruning were as well understood in the days of Pliny as now. Treatises on the subject written 2000 years or more ago are in existence and are occasionally quoted from by modern writers. It is true that much advice was given which had its source

These consist of hand pruning shears of the best make. Cheap shears should be avoided. A saw of the curved French or "Californian" pattern is needed and a good pruning knife. A ladder about eight feet is a convenient height, of which there are several good patterns on the market, is easily moved, and is a necessary adjunct to the outfit. A wet-

face moisture, or when they reach rock a few feet down and are forced to grow horizontally rather than vertically. A cultivated fruit tree is no exception, and thus allowed to grow, its form is the most symmetrical and beautiful. One school of pomologists still favors this plan, making it a rule never to cut or interfere with the "leader", shortening in the side

chiefly a hot, dry summer, conducing to the bearing of regular, heavy crops. This has not been adhered to as closely as it might, but undoubtedly should be the universal system for all deciduous fruit trees in this state.

To Start Right

The one-year-old trees when planted



solely in ignorance and superstition, and we cannot boast even in this enlightened age of having rid ourselves of all of it. Volumes, one might almost say whole libraries, have been compiled on pruning fruit trees, and the subject has been exhausted, so that whatever may now be said is simply the presentation of old ideas in new form.

We all know the object of pruning to be the increased production of good fruit so far as is compatible with the health and longevity of the tree.

The Man

The quality most lacking and yet most essential in a good pruner is imagination. No one can properly shape a tree unless he can see it mentally as it will be next year, or any of the years following, if a certain system of pruning be followed. Second in importance is the faculty of observation which becomes very acute if trained by use. No two trees are exactly alike, and while good pruning is done according to principle, each will require some little variation in treatment.

Combine these two, imagination and observation, with a love for, or keen interest in, the work and the trees are likely to receive very good care at the



hands of such an operator and to respond in proportion by being healthier and more productive.

The Tools

Let the man be perfect, and without good tools he is badly handicapped.

THE BANKER'S OPPORTUNITY

R. V. Holland



NE of this country's largest bankers made the statement not long ago that "the small town banker is in position to render his community a most valuable service if he will recognize and take advantage of the opportunity by doing his full part in community welfare work".

His statement elicited an expression from one of our small town bankers to the effect that a large majority of small town banks really do more to retard community welfare and development than they do to promote them. A most lamentable condition even if only partially correct as stated.

The president of one of our banks in a town of some 10,000 population stated to the writer a few weeks ago that fully 80 per cent of their loans netted them a minimum interest of 15 per cent per annum.

In reply to my question as to how they get around the usury laws, he replied: "There are many roads to London".

He then went on to explain that many of their loans are small, short time accommodations, and that the bank cannot handle them at regular interest rates without sustaining a loss in practically every instance.

While I realize that there are many bankers pursuing such methods as these, it is safe to say that a majority of them are beginning to appreciate the fact that the growth of their business is dependent upon and limited to the growth of their respective communities, that if they adhere to methods and practices tending to injure or retard local progress they must in turn suffer along with the rest of the community.

Many bankers consider their banks institutions for community service and conduct them accordingly. A splendid example of this class came to my attention a few days ago in the shape of one of our small town bank presidents. During our conversation he expressed views and convictions regarding the banking business which a few years ago would have been considered business anarchy.

When asked as to his ideas concerning a bank's duties and its obligation to the community he said: "Inasmuch as we are the largest corporation in our town we feel it our duty to take the lead in every movement for the good of the locality. We are the largest subscribers to the local chamber of commerce, civic improvement funds, etc., and never fail to have the bank represented in every local improvement campaign. We also make it a rule to take as much or more advertising space in our local papers than any one else in the town."

He further stated that "when a small borrower needs from ten to thirty dollars for a short time we charge him the same rate per cent per annum on his loan that we would if he borrowed \$25,000 or more. We treat the small customer as liberally as the large one, thus making him feel that no advantage is being taken of him because he is poor. He will remember and appreciate this when he becomes a large customer."

This banker also takes deep interest in agricultural and live stock matters in his community, as a result of which practically every farmer and stock raiser is his patron. One of the merchants in his town stated that the bank was directly responsible for the success of the majority of their business institutions. The bank itself is a splendid success from every standpoint.

A few examples of this kind will undoubtedly bring about a radical change in small town banking methods. The opportunity is ripe for those who desire to take advantage of it, which many are already doing.

stone may also be carried in the pocket, but the shears should be honed every night, and, with the saw and knife, cleaned and oiled: the latter is needed for paring edges if a large limb has to be removed and for cutting out any gum which may be found.

The Work

The natural aspiration and inclination of a tree under normal conditions is for its top to grow upwards, in an upright position, seeking air and sunlight, and for its roots to go down, seeking moisture. Modifications occur, as when the central stem or leader is broken or the top crushed or bent with the weight of snow, and, with the roots, when there is ample sur-

branches only, as subsidiary or auxiliary thereto.

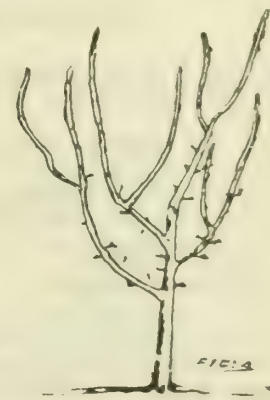
An objection to this method is that very careful and annual expert pruning is necessary in order to keep the tree in this position after it reaches bearing age, otherwise the branches will bear down with their load of fruit and expose the central stem to the sun, which in the California summer temperature is not desirable, sunscald being the invariable result. Another objection is the greater difficulty in picking the fruit.

Early in the pomological era of California it was found by some of our most practical growers that the goblet or vase form, or some modification of it, was better suited to our normal conditions, these conditions being



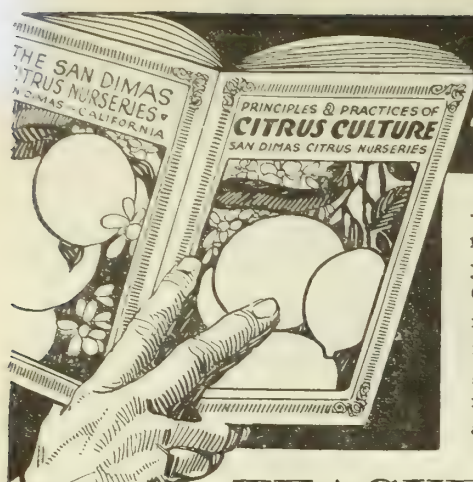
should be cut back to two feet from the ground, not to 16 inches, as is often advised. The pioneer growers erred in recommending that trees should be headed so low, as it did not allow of proper spacing of the branches which were to form the foundation for the future tree, but resulted in the branches all starting out at one point in a kind of whorl. This makes ugly crotches and a permanently weak spot, as well as a crowding or pinching in the base of these branches, often causing exudation of gum.

The illustrations show a French prune tree the second and third years, or the third and fourth, and may serve as a basis for other fruit trees. It is better to let alone the growth that is made the first year, and if this growth is but slight, cut it down to four or five inches so that there will be sufficient strong, upright shoots the next year to make the future head. Then the second year, or the third year as the case may be (depending upon the growth) select three or four of the best shoots, spaced apart at a uniform distance of about three or four inches. Cut out all other shoots, except small laterals which are shortened in annually to make future fruit spurs. These should



be cut back as indicated by, cross lines in Fig. 1; Fig. 1 showing the bushy growth that is made the second, or perhaps the third year. Fig. 3 shows the next summer's growth, and Fig. 4 illustrates the same tree

Continued on Page 620



Have you this Book?

—if not, it will be our pleasure to mail you a free copy, *provided*, you will write us the number of Citrus trees and varieties you will require. Besides giving exact information on orange and lemon growing from seed to harvest, from packing house to market, it also describes

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Eureka Villa Franca Lisbon

STANDARD LIMES
Mexican Tahiti

STANDARD POMELOS
Marsh Seedless Imperial Triumph

ORNAMENTAL SORTS
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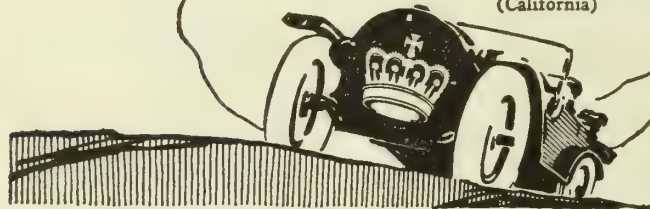
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Citrus

and

Tropical

Fruits

LIFE IN THE SOIL

Address By Howard S. Reed Before
Lemon Men's Club of Southern
California



It is coming to be pretty generally understood by all thinking men that the future welfare of the race is indissolubly bound up with the productiveness of the soil. For the past ten years the prices of the necessities of life have continually increased owing to the increase of total and per capita consumption of commodities of this country. The recent utterances of men like Mr. J. J. Hill have been a clarion note to arouse the interest of the producers and consumers alike in the absolute dependence of the nation upon the ability of its soil to produce, not average but maximum yields from year to year. This is entirely possible because we have in our soils our one great, indestructible national asset. For my part I have no patience with those misguided croakers who continually lament that our soils are slowly but surely being depleted of their stores of plant food constituents and assure us that within the limits of the present century our vast domain will be fruitless and the soil will be "a burned out cinder".

Portions of the Atlantic coast states have been cultivated for upwards of 300 years and where not abused the soil is producing better crops today than ever before and compares favorably with the newer lands of the Mississippi Valley. For the ten years, 1899-1909, the average yield of corn per acre was the same in Virginia as in Kansas; the average yield of corn per acre in Massachusetts exceeds that of Illinois. Not only do I believe that these yields can be maintained for centuries but that they will be materially increased the country over.

Soils are now being studied as other realms of nature are studied. Up to the present time our knowledge of the plant far outweighed our knowledge of the soil because only within a short time has the soil problem come to be thought of as essentially dynamic. Until recently the assumption has been made more or less explicitly that the soil of a field remains fixed indefinitely. It has been assumed that the only important change taking place in the soil is a loss of mineral plant nutrients, partly by the leaching action of water and partly by the removal of garnered crops. In other words the soil has been regarded as a static, lifeless system. This is a fundamental error. We now know that there are extensive living agencies at work in the soil by means of which deep seated and fundamental changes are brought about.

Why this late development of soil science? Largely I believe on account of the work and writings of Baron von Liebig. Great as were the contributions of Liebig to many branches of chemistry he undoubtedly retarded work which would have revealed the truth years ago. During Liebig's lifetime men like De Candolle and Pasteur were revealing the important role which living organisms play in the constructive and destructive work of nature in the health and disease of the body. They met with incessant and bitter opposition from Liebig. Liebig's predilection was for chemistry, and he could see nothing in the world but chemistry. Unfortunately the fame derived from his real discoveries floated many an unseaworthy theory of the same mastermind. Such was the case in regard to his theory of mineral requirements of plants, which held that the fertility of a soil depended on the presence of certain mineral substances which are invariably found in the ashes of plants. Although the experience of the farmer has not confirmed the chemical analysis of the soil this view

of Liebig's has prevailed nearly to the present day.

With the dawn of the idea that there in life in the soil, a new phase of study was immediately opened, and although yet in its infancy many important results have been attained. On the side of the plant it has been shown how great an influence may be exerted by the growing root itself. The researches conducted by the bureau of soils laboratories of the United States department of agriculture have shown that the plant roots frequently leave noxious excretions in the soil which, while injurious to plants of that species, are harmless or even beneficial to the roots of another species. This idea had been advanced by De Candolle in 1832. This fact in itself throws needed light on the necessity for rotation of crops since soils may become unproductive, not for lack of any essential ingredients but because the previous excretions render them unsanitary for the continued growth of that crop. Researches conducted in the same laboratories have also shown that in certain soils toxic compounds may arise from the disintegration of plant remains under improper conditions of aeration or water supply, but where proper conditions exist the plant remains and manures disintegrate to form the beneficial classes of humus bodies.

On the part of the soil it may be shown how great are the extent and relations of microbial life in the soil and how powerfully they influence its productiveness.

Of all the varied activities of bacteria in nature none compares in importance with the work of the soil bacteria. They not only determine the fertility of the soil, but they serve as the connecting link between the world of the living and the world of the dead. They are the great scavenging agents which tear down the dead bodies of animals and plants and restore the carbon, nitrogen, sulphur and other elements of the tissues to the round of nature. The processes of nature are such that the same material is repeatedly used, passing in endless cycle from plant to plant or from plant to animal and back again to plant, but always with the intervention of bacteria. Without their action dead bodies would accumulate and cover the surface of the earth; the kingdom of the living would be replaced by the kingdom of the dead, and the world's supply of carbon and nitrogen would be locked up in a form useless to most forms of life.

A pile of finely powdered rock is not an agricultural soil because it contains no organic matter. In a good fertile soil the organic matter is present in the form popularly called humus. The presence of humus in the soil gives it that warm brown color which the farmer recognizes as characteristic of fertile soils. Humus represents a fairly permanent form into which the decayed plant and animal tissue have passed. A load of hay incorporated with the soil is not humus but may be converted into humus by the proper agencies, chief among which are the bacteria and fungi. In a warm, moist, well aerated soil the plant tissues are attacked by bacteria which break down the cellulose, starches, gums, sugar and protein. New compounds are formed, among which we may detect considerable amounts of carbon dioxide. The first steps in this decomposition are somewhat similar to the digestion of plants in the stomach of an animal. Following this process of disintegration the various components recombine and unite in ways as yet little understood into various substances of a semipermanent nature which we call humus, or humus bodies. In this stage the organic matter shows its beneficial properties. The soil is porous, freely admitting water and air, does not readily lose heat, becomes friable, is a congenial medium for plant growth.

Under the best conditions when the soil moisture is neither excessive nor deficient, soils allow the decay of the humus, but the rate of decay is quite slow. On a properly cultivated clay or clay loam the effects of manure may usually be noted several years after its effects have altogether vanished from sandy soils. For this reason soils consisting largely of clay are commonly known as strong soils. In case such soils are too compact to permit the most profitable rate of humus decomposition their texture is usually improved by cultural methods which result in increasing the growth of the proper bacteria, for example, by drainage or by application of lime.

While humus is extremely important both as a chemical and as a physical agent in soil improvement, its usefulness does not end there. Humus contains different chemical elements derived from former generations of plants, one of which is very essential for plant growth, namely, nitrogen. Humus nitrogen as such is of practically no use to green plants but must undergo transformation. One class of bacteria has labored to convert the plant tissues into humus. Subsequently another class of bacteria must bring about a decomposition of the humus and the formation of new nitrogenous compounds. This lengthy process is known as nitrification.

It is a curious thing that we owe the early studies of nitrification to the arts of war rather than the arts of peace. The long wars of the eighteenth and early nineteenth centuries were a severe drain upon the niter deposits. When England acquired India the other European nations were cut off from the principal niter deposits known at that time. Under the stimulus of necessity Napoleon directed the thought of the French toward the possibility of increasing the production of nitrates. Experiments showed that nitrates could be formed in a properly constructed compost heap containing animal and plant remains and that the interpolation of brush and straw, which promoted aeration, promoted the formation of nitrates.

In more recent years we have learned that the principal agents in the process of nitrification are the bacteria which such material contains. The first step and perhaps the most beneficial one is the formation of ammonia from the nitrogenous compounds in the soil humus. This process may go more or less simultaneously with the destruction of the cellulose of the plant tissue. While this process is going on another class of bacteria convert the ammonia into nitrites. Nitrites are not suitable for the nourishment of green plants; in fact they are more or less poisonous. However these compounds do not remain long in the soil because they are soon acted upon by a third class of bacteria which acts upon the nitrites and transforms them into nitrates. These last two classes of bacteria work in wonderful unison, transforming the nitrites into nitrates almost as fast as they are formed. The sum total of the activities of the third class of the bacteria results therefore in the formation of nitrate nitrogen in the soil, which is a suitable form of nitrogen for the nourishment of most green plants.

Since this process is chiefly bacterial in its nature it follows that conditions favorable to bacterial activity are also favorable to nitrification. If the soil is too dense to permit the access of sufficient air or too wet, this process does not go on properly. On the other hand other classes of bacteria may act upon the organic nitrogen, producing from it substances detrimental to plant growth. Such instances are seen in swamps where only plants having a highly resistant constitution are able to survive.

It will be noticed that these processes do not increase the amount of nitrogen suitable for growing crops. The question still remains, "Whence came the world's supply of combined nitrogen?"

When rock layers disintegrate to form soil they ordinarily produce a soil which contains all of the ordinary elements required for plant food except compounds of nitrogen, for of this latter class most rocks contain none. Yet when productive soils are analyzed, for example, the so-called

virgin soils, they are found to contain large quantities of nitrogenous material, as much as 5000 to 10,000 pounds per acre, to a depth of one foot. Chemists are unanimously agreed that all of this nitrogen has been derived in some way from the large store of gaseous nitrogen in the air and that the major part of it has been accumulated through bacterial action.

We owe to many hands the works which lead up to the discovery by Hellriegel and Wilfarth of the nitrogen gathering bacteria associated with leguminous plants. The facts which they brought to light have shown the farmers how to maintain indefinitely the supply of valuable nitrogen in cultivated soils. Considering its importance to the human race it is almost impossible to dwell too strongly upon this process of nitrogen fixation. Without it life as at present organized could not exist upon the earth today.

Certain varieties of these bacteria find an habitation in the roots of leguminous plants and produce there-

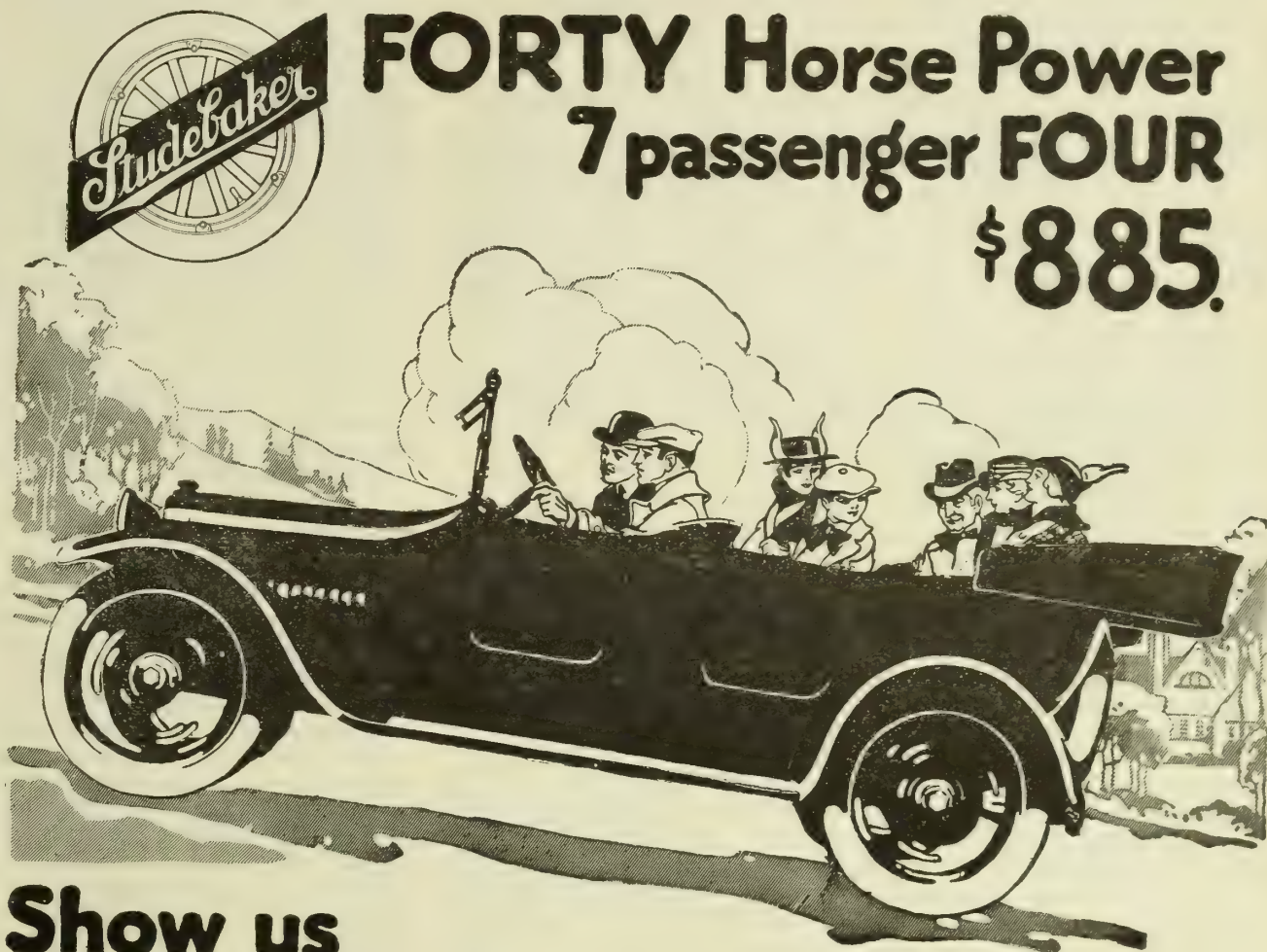
on swollen nodules. While their host plant lives the bacteria use atmospheric nitrogen to build up a store of nitrogenous compounds, part of which go to nourish the host plant during its life, but much is left in the root and is added to the soil upon its death and decay. Thus through the benign activities of these bacteria soil wealth is created from an inert worthless gas in the atmosphere.

It has been frequently proven that the legume nodules are not produced in the absence of the specific bacteria and hence the fixation of nitrogen does not go on. If the suitable bacteria are present in the soil they enter into intimate association with the roots of the leguminous plants and form the characteristic nodules. The plants obtain in this way a suitable supply of nitrogenous material and the bacteria likewise are benefited by obtaining a suitable supply of carbohydrate from the tissues of the host plant. The bacteria enter the fine root hairs and partly by migration and partly by growth strands

progress into the cells of the outer layer of the root. The more virulent strains of bacteria produce more and larger nodules than the weaker strains. In the nodules many of the bacteria grow in typical peculiar forms as a result, no doubt, of the presence of organic compounds peculiar to that plant. For example, the bacteria of the alfalfa nodule when grown in pure cultures are in the form of short rods, but in the nodule the same variety of bacteria is found in the form of x and y shaped organisms.

To Be Continued

Orange growers of Riverside, San Bernardino and Orange Counties are organizing clubs, the object of which is to send a protectionist to congress from the 11th district. Lemon men have been seriously injured by Mediterranean fruits and it is proposed that as politics was used to deprive the lemon of protection the same means now be used to secure its return.



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The California Cultivator

Rural Californian Combined with the
California Cultivator

A Journal of Horticulture and
Agriculture

By

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Thursday, Dec. 23, 1915

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of complaint must be sent us within 30
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the subscriber must have mentioned the
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BEAN MEN ORGANIZING

The central committee having
in charge the organization of the lima
bean growers of the state is pushing
preliminary arrangements with a
vigor which should insure a strong
organization. Orange County grow-
ers are also agitating organization,
and we doubt not will join most
heartily with the Ventura growers.

FRUIT INSPECTION PAYS

Fresno County's horticultural
commissioner has handed in his re-
port as to the season's operations in
inspection of green fruit. This in-
spection has cost the county \$3268,
and it is estimated that the returns
to the county because of the standard-
ized fruit shipped and the better
reputation for dependable goods will
amount to many times more.

RUSTLERS BEWARE

Cattle men of Tulare County
have organized a protective associa-
tion and to the end that protection
may protect, they are planning to
offer a reward of \$1000 for the arrest
and conviction of anyone stealing cat-
tle from a member. This should in-
duce some rustling on the part of
amateur detectives up that way and
reduce the amount of rustling on the
part of the cattle thieves.

IMPERIAL PROBLEMS

Probably no farming section in
the world ever offered more perplex-
ing problems than does the Imperial
Valley. Its dozens of years' experi-
ence have availed much, the state ex-
periment station under direction of
Mr. Packard is solving many prob-
lems and the United States depart-
ment of agriculture is aiding with
marketing and other specialists. Last
Saturday there was held at Brawley

an institute or school unique and we
believe most helpful. Mass sessions
were held, also at times the meeting
was broken up into sections and each
attended the one where his own spe-
cialty was being discussed.

Many of the speakers were practi-
cal home people while others, equally
as practical, came from the state uni-
versity to aid in the work.

GET-RICH-QUICK SETTLERS

The Weekly Letter of the Ari-
zona experiment station shows that
Arizona has a problem which is simi-
lar to that of California and we sup-
pose of all other states where there
are human beings. The letter says:
"One of the greatest handicaps to
rapid progress in the development of
Arizona's agricultural resources is
the large number of want-to-get-
rich-quick settlers who have come
to take up land in the state. They
have been lured here by the at-
tractive advertising which has been
sent out and have come with
the idea that they can secure gov-
ernment land for practically nothing
and soon sell out at a big increase
in price without having invested
much money and without having done
much hard work. These speculators,
or "land grabbers," as they might be
called, are proving a serious obstacle
to the development of many Arizona
communities, and in several instances
the local farmers' organizations have
been discussing ways and means of
ridding the state of these objection-
able settlers."

BEAUTIFUL WEATHER

"Beautiful weather, thank you".
Everybody tap on wood while we re-
mark that this is an exceptionally
fine season. The orange grower has
been sitting a bit near the edge of his
chair ready to spring into action if it
became any cooler. In fact, in a very
few cases there have been smudge
pots lighted "in the next county", but
even where this has not been done
we believe there has been no injury
whatever to citrus fruit. Another
two weeks and we will have passed
the danger point unless a streak of
that exceptional weather which some-
times does appear in California is
given entirely out of season. We be-
lieve there was never a time when
the orchardists were so fully pre-
pared for the coming of Jack Frost
as they are this year, and the cool
weather has been merely sufficient
to give a good lively fuel trial which
will prove of value if the need does
come.

As to rain there has been sufficient
to start nearly every plow in the
state.

STAND BY HIM

Harris Weinstock, market di-
rector of California, is sending out a
letter "To the people of California"
asking that support may be given
him in the big task which confronts
him. After outlining the work he
hopes to do he closes with:

"And now, as I go to the task
assigned me, I shall give to it the
best that is in me. All that the years
of my business training have taught
me, all that I have learned in many
kinds of public service, and all of the
ideals which have guided me in both
private and public life, are hereby
dedicated to this service. All that I
ask in return is some small recogni-
tion of the simple fact that I am try-
ing to render an exceptionally diffi-
cult service and that I shall need the

forbearance and the support of all
producers, distributors and consum-
ers who realize what the success of
this new state commission market
can be made to mean to the entire
state."

Outside the sympathetic appeal in
the above and simply as a matter of
selfishness, we wish to assure Mr.
Weinstock we're his to command, and
in response to one sentence in his let-
ter, "I think you will agree with me
that this is, in the language of the
Greek poet 'some job' we can only
say, "Mr. Weinstock, you're some
man."

PRUNING

These long evenings give oppor-
tunity for the orchardist to study up
on the question of pruning. Nearly
every orchardist has his own theories,
unfortunately many of them wrong,
and the rest of us, who sometimes
know less of the conditions of his
orchard than he does, try to help him
with suggestions. The fact is that
every orchard and every tree can be
intelligently pruned only when—like
human beings—it is understood. The
man who lives with his orchard soon
learns to understand its needs from
its habits. However, there are some
general principles of pruning which
we all must understand if we would
have our trees live up to their best
and produce quality and quantity. As
a help in that direction we have in
the present issue an article on this
subject by Mr. Leonard Coates, who
has had wide experience in the prun-
ing of all kinds of deciduous trees.

PROFIT IN QUALITY

At the beginning of this citrus
season there was a determination on
the part of shippers to make it a sea-
son of quality, to see that all fruit
shipped qualified under the eight to
one maturity test recommended by
the department of agriculture. This
delayed the early shipments, and
until a few days ago the quantity was
falling behind that of preceding
years. The last two weeks' ship-
ments however have exceeded the
same two weeks of any previous year
in the history of citrus shipments,
and still better, the price from the
very first has been higher than any
preceding year for the same week.
Bear in mind this is not for particu-
lar weeks but for every week since
the shipments began. Color of fruit
has not been used as an index to qual-
ity or to ripeness, but only the chemi-
cal standard.

One result of this campaign for
high quality may be mentioned. It is
that in the Eastern markets the daily
average price has been higher than
last year's high price. This is not men-
tioned to glory in the fact that Cali-
fornia is topping Florida, but it is a
good point to call to the attention
of those of our readers who have been
restive under this year's restrictions.
When a man has found his fruit
showing good color and considers the
prices secured for exceptionally early
fruit in former years and the further
fact that the cold may come and
lower the quality of his fruit he is
naturally very anxious to unload, but
the interests of all the state are far
above the interests of one man or of
one community, and returns are now
showing that while the very earliest
prices were not abnormal the aver-
ages up to this time are by far the
best of any preceding year. The sea-
son looks most promising and we
trust the sections which will begin
marketing fruit soon after the first
of January will maintain the same
high standard set by the earlier sec-
tions.

Agricultural Notes

Owing to shortage of wheat the
Spanish government has authorized
free admission of wheat, exempt from
transportation tax as well as import
duty.

Germany was our largest customer
for dried apples during the five-year
period, 1910-1914, taking a full half
of our export. Holland took over
one-fourth.

New South Wales, Australia, will
have citrus fruits to export this year.
The coming crop, oranges, lemons and
mandarins, is now estimated at 125,-
000,000 bushels.

More than two-thirds of the apple
crop of Nova Scotia this season was
packed and marketed by the United
Fruit Companies of Nova Scotia, a co-
operative organization.

Fifty schools in agriculture and fif-
teen schools in home economics will
be held by the extension department
of the Michigan Agricultural College
in that state this season.

Whale guano is being used exten-
sively by South American farmers.
According to the British and South
African Export Gazette, it is sold by
the government at \$31.60 per ton
f. o. r.

A plant for manufacturing citrus
juices has been established at Lake-
land, Florida. The plan is to use cull
grapefruit and oranges. The peelings
also will be used in preparing oils and
extracts.

The New Zealand government has
imposed a war tax of one-half penny
(one cent) additional on every piece
of mail (except newspapers) posted,
save in case of mail under the postal
union rate now paying five cents.

The annual value of the food used
on nearly a thousand farms in the
United States, surveyed by the de-
partment of agriculture was found
to average \$448 per family, of which
58 per cent was furnished by the
farm.

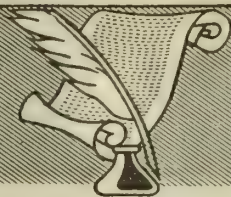
Minnesota has a state fruit breed-
ing farm established some six years
ago. The principal work of the farm
has been to secure a hardy apple that
will bear the most delicious fruit ca-
pable of keeping sound for a long
time.

According to Die Deutsche Zucker-
industrie the German military authori-
ties in Belgium have issued a decree
prohibiting under penalty of the law
the use of any sugar beets for cattle
food in that country. Offenders will
be fined 20,000 francs (\$4,000) or five
years' imprisonment.

California and Michigan produce
75 per cent of the domestic beans
consumed in the United States, and
the production in California is rapid-
ly increasing. Almost every variety
of beans, from small whites to limas,
are grown in this state and the acre-
age this year is estimated to be 25 per
cent greater than that of 1914. Heavy
purchases have been made for use by
the armies of Europe.

The outlet for dairy products of the
United States has increased appreci-
ably in the last year through export
demand. Butter exports have in-
creased from about 3,500,000 pounds,
the usual amount exported annually
before the war, to 10,000,000 pounds
during the fiscal year of 1915; at the
same time imports of butter have de-
creased from about 8,000,000 pounds
to about 4,000,000 pounds. On the
same basis exports of cheese have ad-
vanced from 2,500,000 pounds to 54,-
000,000 pounds.

Agricultural News Notes



of the Pacific Coast

Northern California

The orange crop of Butte County is practically all picked.

Northern California reports half of its Navel crop now in the Eastern market.

Two thousand acres will be planted to grain on the Natomas Consolidated holdings.

Many cattle have been reported killed by coyotes in Modoc and Lassen Counties.

Gangs of men are busy tearing down the beautiful exposition buildings at San Francisco.

The Forest Hill local of the Placer County farm bureau will hold a meeting December 30.

Plantings of Waterbune rice on the Phelan ranch west of Chico ran 51 sacks to the acre.

The department of agriculture has set aside \$1000 to pay laborers who will poison coyotes in Modoc County.

Ten thousand dollars' worth of Orland almonds were sold last week. This is practically 90 per cent of the Orland output.

Directors of the Sacramento Valley exposition commission have decided not to exhibit at the San Diego exposition for 1916.

The California Ripe Olive Association has planned to buy supplies for members cooperatively. The first purchases have been of fertilizers.

The third annual convention of the Inland Waterways Association of California will be held at the Palace Hotel, San Francisco, February 21-23.

A large planting of pear trees is being made in the section about Chicago Park in Nevada County. The tree holes are being dug with dynamite.

The university farm shipped to the livestock show at Portland 15 head of prize cattle and 15 head of sheeep. All were winners at the exposition last month.

The first prize for exhibit of varieties of pears at the Panama-Pacific was awarded to the Loma Rica Nursery of Grass Valley. This nursery exhibited 48 varieties.

The Sebastopol Agricultural Club was addressed by Assistant State Horticultural Commissioner Weldon at its last Saturday's meeting. Mr. Weldon gave a lecture and demonstration on pruning.

Central California

Olive pickling has started in the Tulare cannery.

Lindsay, Tulare County, received 1.30 inches of rain during the last rain storm.

Garlic raisers of Monterey County have been receiving from ten to 15 cents a pound.

Melon growers of Le Grande, Merced County, have organized a marketing association.

Many poultrymen from all over the state exhibited birds at the show held last week in Porterville.

A swine raisers meeting was held at Poplar, Tulare County, last Friday. Speakers from the state university were present.

More than 400 tons of dried peaches belonging to Selma growers will be pooled. The growers expect to realize better than five cents.

Modesto wants the next state poultry show. The Stanislaus Poultry and Pet Stock Association will put forth its best efforts to get it.

A mass meeting of potato growers of the Salinas Valley was held yesterday. Other meetings will be held in the county in the near future.

The San Joaquin Valley Counties' Association will direct its activities next year toward securing a wider market for produce of the valley.

All citrus packing houses in the Porterville district are working with day and night and crews to pick the fruit and get it off to the Eastern markets.

The state authorities have just completed planting 2500 soft shell clams in Morro Bay, north of San Luis Obispo. Only 25 clams may be taken by one person in a day.

Hames Valley in the southern part of Monterey County is developing into a turkey raising district. Heavy shipments will be made to San Francisco for the Christmas trade.

County Bee Inspector Henneken of Monterey County, after a tour of inspection, reports apiaries in prime condition. He estimates this year's honey crop of the county at 250 tons.

The California Associated Raisin Company is one of the four biggest taxpaying companies in Fresno County. The others are the Southern Pacific Railway, the Standard Oil Company and Miller & Lux. The tax of the Associated is almost \$17,000.

Southern California

The Associated Chambers of Commerce of Orange County will meet in Yorba Linda January 29.

Most of Calexico's cotton is still in the warehouses, being held until the market goes up to better prices.

Imperial shipped out its first carload of citrus fruit the first of December. It was made up mainly of grape fruit.

Cotton growers are not allowed to import cottonseed into California from any state where boll weevil is known to exist.

Many enrollments are being made in the two weeks' school in poultry husbandry planned to be held in Riverside next summer.

The matter of securing a farm adviser for Imperial County was discussed at the Farmers' Assembly held at Imperial last Saturday.

"Control of Grasshoppers in Imperial Valley" is the title of a circular just issued by the University of California. Its author is W. E. Packard, in charge of the experiment station at El Centro.

Walter E. Swingle of the United States bureau of plant industry has been in China, Japan and the Philippine Islands investigating citrus canker. In a recent talk at Riverside Mr. Swingle declares the canker as contagious as smallpox.

Highland, San Bernardino County, shipped about 15 cars of oranges for the Christmas trade. Southern orange growers are making no effort to rush their fruit East, leaving that trade to Northern and Central sections where the fruit matures earlier.

At the recent annual meeting of the Covina Citrus Association A. P. Kerckhoff was re-elected president, J. R. Elliott, vice president, and George Anderson secretary and manager. This association shipped last season 84,440 boxes of Washington Navels, bringing a net average to the grower of 82 cents per box; 46,522 boxes of Valencias averaging \$2.82.

The California state board of health is sponsoring a bill to be introduced in the next congress by which a subsidy of five dollars per week per patient may be paid by the United States government to institutions caring for non-resident indigent cases. This is to meet the great expense annually incurred by California in caring for destitute tubercular sufferers who come here from Eastern states every fall.

The Coast

The head lettuce industry is becoming an important one at Hood River, Oregon.

A farm adviser has been appointed for Navajo and Apache Counties in Arizona. C. R. Fillerup was the appointee.

One of the largest sheep deals consummated in Montana for years, was the sale of 12,045 head, commanding nearly \$65,000.

The Pacific International Stock Show at Portland last week brought together a splendid showing of cattle, sheep and swine.

The Santa Fe Railroad has announced a reduction of 13 cents per 100 pounds on dried fruits from California to Florida.

Eight thousand pounds of alfalfa seed grown on the Yuma project in Arizona has been purchased by the department of agriculture.

A number of plantings of Australian salt bush have been made in different sections of Arizona. It is reported to be growing well and spreading rapidly.

Stock markets of the Northwest report a pronounced shortage of sheep. Investigation discloses the fact that very few sheep are being maintained on range for later marketing.

D'Anjou pears raised in the Wenatchee Valley sold well this year. The pool of the Northwestern Fruit Exchange for the Wenatchee Growers' Exchange returned net to the growers from \$1.35 to \$1.90 per box.

Shipments of graded apples from the Wenatchee district of Washington, including Douglas, Grant, Okanogan and Chelan Counties, will exceed 4000 cars. The Growers' League shows record of 3607 cars shipped to date.

A "Buy at Home" campaign has been launched by the women of the Yakima Valley. They have gone on record as pledging themselves to purchase package or processed food put up in the state of Washington in preference to all others.

Hood River, Oregon, reports that for the first time in the history of the fruit district the local ranchers raised enough turkeys this year to not only supply the Thanksgiving demand but to furnish a Christmas supply. Not a single turkey has been shipped into the city this year.

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Deciduous

Fruits

TREATMENT OF UNFRUITFUL VINES

By F. T. Bioletti



HE failure of a vine to bear satisfactory crops may be due to a large number of causes, but there are two general cases to be considered; that of weak vines and that of strong.

No vine can bear good crops regularly unless it is vigorous. Lack of vigor may be due to unsuitable soil or water conditions, imperfect cultivation, to the attacks of phylloxera, grape root worm, root rot or other diseases or pests. The remedy in this case is to find the cause of weakness and remove it if possible.

Vigorous vines, however, may be parsimonious in their yield. In this case there are two conditions to be distinguished. Some vines fail to develop fruit buds. This is shown by an absence or paucity of blossoms in the spring. Others produce an abundance of blossoms but the blossoms fail to set and no fruit results.

Failure to develop fruit buds may be due to lack of sufficient heat to mature the wood. Some varieties bear well in the hot interior but hardly blossom along the Coast. An early autumn frost may injure the fruit buds or interfere with their development. The same effect may follow the complete or partial defoliation of the vines by grasshoppers, vine hoppers, mildew, sheep, etc. If this happens late the vine may not be perceptibly weakened, but the fruit buds on which the next year's crop depends may be prevented from developing. The flowers are developed in embryo in the buds during autumn.

The more vigorous the vine the more liable the fruit bud formation is to interference in this way.

Failure of the blossoms to set in the spring may be due also to several unfavorable conditions. Cold weather during the blossoming and excessively vigorous growth of the vine are the most common.

There are numerous devices which may be tried to overcome the sterility of vigorous vines.

First, longer pruning should be tried. Vines which have been pruned to spurs of two buds should be given three or four. If this does not cure the trouble cane pruning should be tried. Bowing the canes or tying them to horizontal wires may be helpful.

Next the perfect maturing of the wood in autumn should be promoted by ceasing cultivation and irrigation early enough to stop the new growth sometime before the early winter frosts commence. The canes should stop growing just about the time the crop is gathered.

Late pruning is sometimes effective by delaying the blossoming. A delay of a week or ten days in the time of blossoming can often be brought about by pruning after the end buds of the canes have started. This makes it more likely that the weather will be warmer and more favorable to setting during blossoming.

Finally various methods of summer pruning may be tried. These are all more or less weakening and should be used with discretion.

The setting of the blossoms can often be much improved by pinching. This consists in removing the extreme tip of the growing tip shoot with finger and thumb. It is done when the shoots are about 18 inches long and when the bunches of unopened blossoms are well in evidence.

More severe summer pruning later in the season is sometimes effective in promoting the formation of fruit buds for the following year. This is called topping. This consists in cutting off the ends, one or two feet, of vigorously growing shoots in June or July. It should not be done in excess and only with very vigorous vines.

Finally ringing may be resorted to

in special cases. This consists usually in removing a ring of bark about one-eighth of an inch wide from the cane just below a bunch. Its object is to hasten the ripening and increase the size of the grapes. Ringing an arm or even the whole vine in a similar way may hasten the maturing of the wood and the formation of fruit buds for the following year. This form of ringing should be done late in July or August, according to the locality. It can only be used with excessively vigorous varieties, such as the Black Corinth. Most varieties would quickly succumb to such treatment.

NURSERY INSPECTION IN FRANCE

Under the new regulations in France the following measures for inspection of nursery stock must be taken:

In order to get a license the firm applies annually, paying a fee: the form of application for nurserymen states that the applicant is already well acquainted with the regulations in force between France and the countries the applicant may deal with: that the applicant will conform to the regulations that may be laid down: that he will give every facility to officials; that he agrees not to include in consignments from his establishment plans derived from other establishments without having previously given ample notice (these other establishments also to be licensed): that he will attach to each consignment a copy of the invoice, with values, and a declaration that the whole consignment is from licensed and inspected cultivation.

A similar application is to be made by exporters of agricultural produce.

The licensed firm can then apply for inspection of the total stock intended for export. This inspection must take place within eight days of the application, and the firm then gets a certificate of inspection for that stock. Certificates of freedom from disease are given on the above inspection, if required, but no certificate will be given without a copy of the usual exporting documents. If it be desired to include in a consignment any plants other than those that have already been inspected, then inspection of these must also be obtained. Each consignment can be inspected separately if preferred and if it be possible. The exporter has to number each consignment, attaching this number to all documents.

The following are the measures to be taken in regard to nurseries and consignments:

Nurserymen have to take all precautions against pests and diseases, and to follow the advice and the formulae laid down by the phyto-pathological service.

During the winter, the nests of the brown-tail moth, the egg masses of gipsy and lackey moths must be destroyed on fruit trees and on adjoining hedges. From the first of September all new nests of caterpillars are to be destroyed on stock destined for export in the following autumn or winter.

Before lifting fruit tree stock, the nurseryman will strip all leaves and remove all nests, egg masses, etc.

Workmen who sort the plants, either in the nursery or in the building, should be well acquainted with the egg masses, caterpillar nests, etc., and make certain that none are left on. If sorting is done in a building, this must be a well lighted one.

When stock of fruit or fruit trees, roses and other plants is brought in tied bundles to the despatching building, if the plants measure more than five millimetres at the crown, they are not to be packed in cases until they have been untied and examined. For plants measuring from one to five millimetres the workman doing the

Continued on Page 620

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Farm Bureaus

FARM BUREAUS BEING ORGANIZED



On the first of July an addition to the Smith-Lever fund will become available for the employment of more farm advisers. At present there are 13 advisers in California, which uses the entire fund received from the Smith-Lever and the state university appropriation. This fund increases each year and with the beginning of the new fiscal year this increase will make possible the appointment of five additional farm advisers. When complete, or rather when the state has secured its full quota of this fund, it will be able to employ about 40 advisers, and it is anticipated that these 40 will be sufficient to meet the needs of the entire state. Up to the present time advisers have been appointed in 13

farmers in the county as contributing members. In addition the board of supervisors of the county must agree to pay the expenses of the farm adviser to the extent at least of \$2000. Then the state university and the nation unite in the payment of the salary, in the appointment and in the control of the adviser's work.

The latest counties to make an effort in this direction are Los Angeles and Imperial. A meeting for the purpose of organizing a farm bureau was held in Los Angeles last Thursday and one at Brawley, Imperial County, on Saturday. At these meetings Advisers Parker of Ventura County, Weinland of San Diego County and Mayhew of Madera County made addresses showing lines of work followed in those counties. Adviser Parker referred to the squirrel campaign of Ventura County, to the



Speakers at Los Angeles and Imperial County Farm Adviser Meetings

Left to right: C. H. Allen, assistant state leader and head of boys' agricultural clubs movement; H. A. Weinland, farm adviser of San Diego County; Thos. C. Mayhew, farm adviser of Madera County; center figure, Dean Thos. F. Hunt of the agricultural college; Farm Adviser Wm. B. Parker of Ventura County; J. W. Gilmore, professor of agronomy, state agricultural college; B. H. Crocheron, state leader of farm advisers.

counties and a dozen or more others are hoping to join the list. It is thought that by the first of July some of these counties will secure sufficient membership in their farm bureaus to secure the appointment of an adviser. The farm bureau is not recognized by the university, at least to the extent of appointing an adviser, until it has one-fifth of all the

effort to secure concerted action in the matter of flood control, to the attempted organization of the lima bean growers, to the securing of county free libraries and the effective work in the hog cholera fight. Adviser Weinland referred to cow testing work with San Diego County dairymen, the organization of the Winter Vegetable Union, squirrel control, also to the campaign to secure more general use of cover crops in orchards and to the work in range sections in securing forage plants.

Leader Crocheron referred to the fact that there are 7919 farmers in Los Angeles County and in order to secure a farm bureau it would be necessary for that county to enroll a farm bureau membership of between 1500 and 1600. Los Angeles County stands first of all the counties in the United States in its production of farm crops, as shown by the census of 1910 and commented upon by the Cultivator some two or three years ago, hence agriculturally it is the principal county in the state and of the 57 counties one-eleventh of the agricultural products comes from Los Angeles County. In consideration of these facts Dean Hunt stated that such a great county would be hard to organize into farm bureaus. In a sense it is more independent and not in such great need of the farm bureau as the smaller counties. However he assured the farmers of Los Angeles County that if the bureau is needed the university is ready to meet the need, and because of the county being so large if one farm adviser is not sufficient to do effective work the university would approve the appointment of others. It is one of the principles of the farm adviser movement that no help is given to a county or to an individual farmer until help is requested. It is not a missionary movement and the individual and the county must appreciate the advantages of the farm adviser movement and take the proper steps to secure aid.

A committee of ten was appointed to perfect the organization of at least 13 farm bureaus in Los Angeles County and to complete permanent organization to the end that a farm adviser may be secured. Prof. Norton of the Gardena High School, chairman of this committee, was instructed to call a general mass meeting as deemed necessary.

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**The
Lawn
and****Flower
Garden****NATIVE PLANTS**Written for California Cultivator
By Ernest Branton

WE should so build parks and country home grounds that people passing by or through would never suspect all of it to be man's handiwork. It is scarcely possible for one to so build that all seems natural, nor is such effect altogether desirable, but let us have California to the fore through the use of native trees and shrubs.

We must learn to love our own trees and other native plant materials, and this we shall do if we become intimately acquainted with them through garden association. No other class of plants will thrive with so little care or appear so luxuriant without other than the most ordinary treatment, for the garden soils and conditions are much better than on native hillsides, and are they not there always beautiful? Being especially suited to soil and climate they necessarily harmonize with local landscapes. Why should we use others except for variety?

If the argument advanced seems good let us then make the foundation planting of native material and introduce as much or little of the exotic into the super-gardening as our tastes dictate. The entrance to parks and home grounds may then be made

through it somewhat of a task, without apparent compensation. Now in the center of such a garden I would build a rest house, a grotto, an oasis with a drinking fount, or some attraction to lure one through the rock garden. For except you gain such an effect you have not builded aright.

Build for Permanence

We often are asked why we cannot have cottages, their coverings and surroundings as lovely as those found in England, the garden spot of the world. When we build of fire-proof and therefore time-proof materials we shall have effects equally beautiful. Our cottages of wood last about a quarter-century if not sooner burned down. If heavily covered with vines a wooden house will not last a quarter-century. How may we have time-mellowed scenes under such conditions? Build of brick, stone or concrete. Then may you cover houses with vines or overshadow them with protecting trees and rest secure from fire, decay, and unhealthy quarters until old Father Time shall make all harmonious and beautiful with the ever present touch of his magic wand.

Plant More Bamboos

Bamboos lend a tropical grace to all landscapes and are harmonizers in gardens of mixed planting. Some are deterred from planting in the belief that they are swamp plants only

"GARDEN BEAUTIFUL"

The long expected book on flower gardening has arrived; it is "The Garden Beautiful" by Ernest Branton, who needs no introduction to readers of the Times Illustrated Weekly. During the rainy season you may slip into your soft chair before the fireplace and stuff your cranium full of working plans from these 200 pages of instruction, programme and illustration. Mr. Branton has brightened the sky-line of hundreds of thousands of lives in his quarter of a century of editorial and field work on floriculture and affiliated arts. In this book he has handed us for permanent keeping and ready reference all that his long experience has developed and acquired. It is published in the Dollar Series of the Cultivator Publishing Company, and is on sale at the book stores throughout Southern California. It will rank with McGroarty's "California History" as a popular Christmas gift.—M. V. Hartranft in Los Angeles Times.

to appear altogether natural, as though one were entering a glade or grove in the wilds, untouched by the hand of man. Once inside we may change the scene, though but slowly, until when we come to the residence, the jewel of the setting, we shall see the luxuriance of the tropics; palm, banana, and the brightness of many flowers. For as we approach the house the richness and luxuriance should increase, even as when looking away from it the foreground should be brilliant and such effect gradually fade away until in the distance we see but the forest depths.

Beautify Rocky Land

It is hardly expected by anyone that a stony or rocky landscape should be highly productive of flowers, therefore to so plant tends to invoke criticism and ridicule and is destructive of harmony. It will prove far better to use trees, shrubs and vines. If, by reason of paucity of soil, any of these shall make a stunted growth it will be but a natural effect, whereas luxuriance of blossom under like conditions must appear strained and unnatural. The keynote to all gardening then would appear to be harmony. And so it should be, for is not art all of harmony and none of discord?

Oases and Grottoes

More and more am I impressed with the advisability of centralization in feature gardening, even as civic centers should prevail and dominate in municipalities. Of late I saw an extensive rock garden built on top of the general level, that is, rocks and soil had been hauled in to build up the rockery. This made walking

though some species grow on hillsides and one or two are dry soil plants. Because they are evergreens somewhat tender in growth it is believed by many that they may be injured by frost. While this may be true of the tropical species there are several that have proven hardy in gardens as far north as Philadelphia and in California at least a score of species will pass unharmed through our most severe winters.

Large Leaf Effects

To gain tropical luxuriance we should use large-leaved plants, and while palms and bananas first come to mind, there are many others. Aralias, senecios, cannas, gingers, wigandias, giant reeds and grasses, all lend to such effect. We should try gunneras, Rheum Collinianum, a rhubarb which "doesn't look it," and a host of such plants, always keeping in mind large leaves. There is no surer or easier way of securing tropical effects. Seek out the hardier members of plant families native to the tropics.

Evergreen Fruit Vines

More and more am I coming to the belief that we should plant for profit and pleasure combined. In looking for ornamentals choose those that also bear fruit. Avocado, guava, loquat, feijoa, carissa, custard apple, sapote, all are evergreen fruit bearing ornamentals. Of late we have been given evergreen raspberries and blackberries and some without thorns. These plants should be utilized for covering arbors, pergolas, covered seats, etc., thereby gaining an effective combination of beauty and utility.

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General Agriculture



EFFICIENT OPERATION OF TRACTOR

The history of the use of the farm tractor clearly shows that an efficient operator is essential if the outfit is to prove a profitable investment. Data collected show that inefficient operation more than any other one thing has been the cause of failures with gas tractors, being directly responsible for 21.9 per cent of all failures, while it also has considerable influence over other factors, such as heavy operating expenses, short life of the machine, etc., which are frequently assigned as the cause of tractor failures.

It is often stated that any boy can run a tractor, as its operation is extremely simple. But it is simple only in the way many things, which to the average individual seem exceeding complex, are simple; that is, it is simple to one who understands it thoroughly. It is an easy matter to learn how to start the motor, how to change gears, operate the clutch, and steer the outfit; but the ability to do all these things well by no means qualifies a man as an efficient operator. They are of much less importance than the ability to detect loose bearings and properly tighten them, to keep the carburetor adjusted correctly, to maintain the ignition system in first class condition, and many other things which are necessary to keep the motor operating efficiently.

The necessity of having the motor operated with a high degree of efficiency, both mechanical and thermal, is readily apparent when it is remembered that a large percentage of the motor's power is required to move the tractor's own weight, and any loss of efficiency is, therefore, especially noticeable on the drawbar, besides adding to the cost of performing the work.

Any man of ordinary intelligence can operate a tractor efficiently, but only after study and experience. To attempt to gain such experience by experimenting with an expensive tractor is apt to prove disastrous, as is attested by numerous instances. While such men with no previous training have become fairly efficient operators through experience with their own outfit, without incurring heavy repair bills, such cases are exceptions and not the rule. It will usually be cheaper and more satisfactory to take a course of instruction under a competent instructor either at some good automobile or tractor school or at some of the agricultural or technical colleges. The time and money saved in operating the tractor the first season will often more than repay the cost of such instruction.

It is sometimes pointed out that the average individual has little difficulty in operating an automobile successfully without special instruction, but there is a great dissimilarity in the two cases. The automobile is primarily a pleasure vehicle and expenses are not of vital interest; it is equipped with a motor with an immense amount of reserve power and need not, therefore, be maintained at high efficiency to give satisfactory service, while delays for repairs result mainly in inconvenience. Furthermore, to enable the average autoist to attain the degree of success which he enjoys there is maintained an enormous number of repair shops, manned by skilled mechanics who are everywhere available to make necessary adjustments and repairs. On the other hand the tractor is used for productive work wherein delays are expensive both on account of their effect on the crop and the enforced idleness of hired help, and it is highly desirable that most repairs be made by the owner, partly to save time and partly to keep down the operating expenses by avoiding employment of high priced repair men. From an economic standpoint the owners of tractors cannot afford to maintain an expensive re-

pair corps, and to become capable of making the repairs personally requires some study and instruction.

The warning contained herein is not given for the purpose of discouraging a farmer from attempting to operate tractors but with a view to insuring a higher degree of success through their use. The necessary training is easily obtained and at slight expense. The gasoline engine is still a comparatively new thing to many farmers, but one generation of well trained and competent operators will disseminate information concerning it so that future generations will acquire knowledge on the subject as unconsciously, yet as thoroughly, as the average farmer's son acquires the knowledge of horses.—A. P. Yerkes in Farm Management Monthly.

CARE OF FINISH OF YOUR CAR

Carelessness in washing and polishing a car is responsible for a great many cars getting to look old and run down so soon.

In washing your car be sure first to use plenty of water and not much pressure. Don't rub the mud and dirt off, but wash it off with water.

Thoroughly soften it and allow it to soak soft before trying to remove it at all. Do not allow anyone to rub fingers over a surface covered with

dirt as the small particles of dust will cut the finish.

You should have two sets of pails, sponges and chamois for washing. It is a good plan never to use the same sponge or chamois on the body and running gears.

Grease makes a smeary appearance on the body and should be kept off as much as possible.

Keep sponges and chamois clean and free from grit and dirt. Use a good body soap and lukewarm water for the last wash for the body.

If you can find a good body polish, it is good, but never use too much or put it on too heavy. Be sure and rub it thoroughly and leave the body free from it, or after a while you will notice it making a coating over the body that is hard to remove.

It is a good plan to go to the man who sold you the car and have him wash it up and show you how to care for it, if convenient. The nice appearance may be kept on a car for a year or two with proper care.

Never allow mud to dry on the body if possible to prevent, as it will make spots that only refinishing will remove.—R. A. Bradley, Colorado Agricultural College.

SELECTION OF SEED CORN

The efforts spent in careful selection of seed corn are resulting in better corn for the Washington farmers who practice it. Professor E. G. Schafer, agronomist of the Washington experiment station, states that more improvement will be possible along this line as soon as the grower recognizes that certain individual ears of corn have a higher inherent value than others. It is not unusual for one ear to produce double the yield of another ear which appears to be equally good.

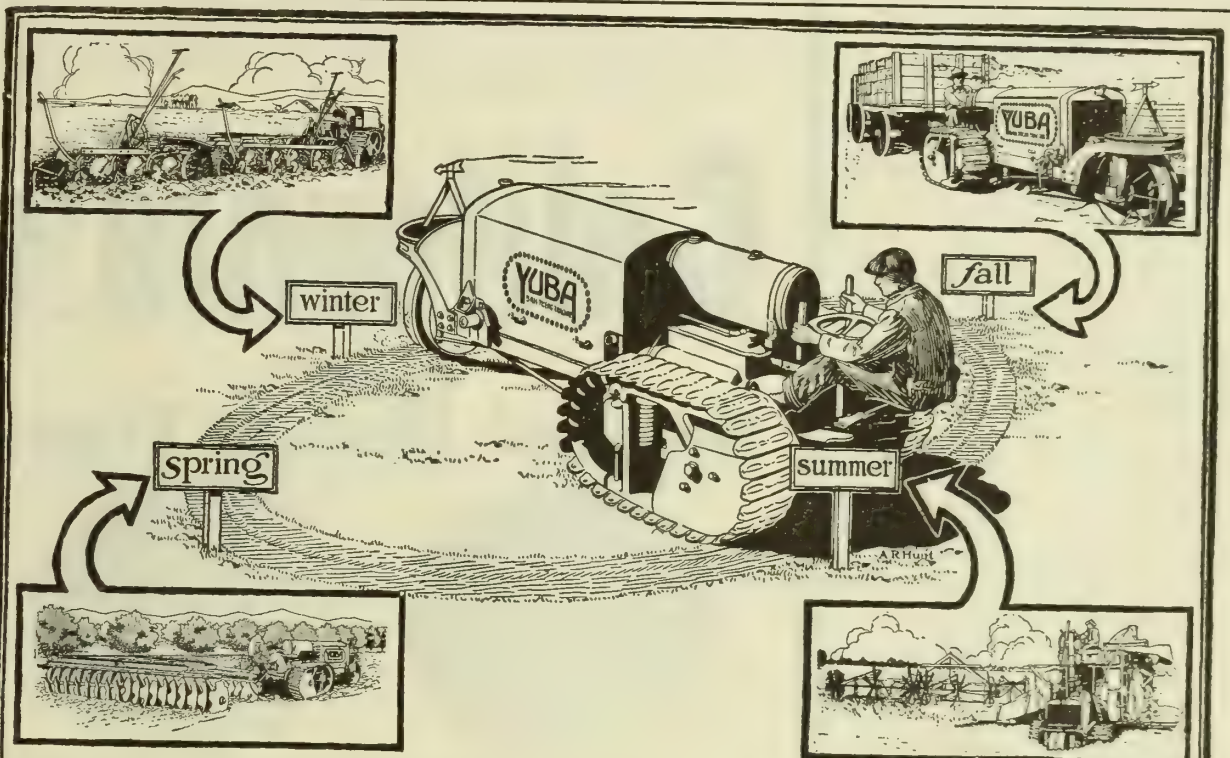
The inherent value of a single parent ear was strikingly illustrated by such an ear producing 11 of the 12 ears in the winning sample of corn at the recent corn show held at Walla Walla.

The prize winning sample was produced by Mr. L. J. Campbell of Walla Walla, and was outstanding in its uniformity and good quality. Besides these 11 prize winning ears, 45 other good seed ears were produced by the same parent ear.

It is possible to improve corn just as live stock has been improved by culling out the weaker individuals. Some improvement has resulted by using only the ears that have the best appearance. Further improvement is possible by the performance test, where only the higher yielding ears are used for seed.

Among the causes for low yields of sugar beets the greatest single source of loss has been found by government investigators to be improper thinning. Unless properly supervised, laborers invariably leave too great space between plants. Other causes for light stands and low yields are poor preparation of the seed bed, improper operation of seed drills, late frosts, the damping-off disease or the ravages of such pests as flea beetles, cut and wire worms.

To avoid or diminish sparks of static electricity, a moist atmosphere is often made use of. To avoid the dangers of the second class of electrical sparks, one must use every possible precaution, and so plan and run his plant that there can be no possible contact of explosive vapors or solids with any possible source of an electric spark.—C. E. Vail, Colorado Agricultural College.



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Fruit Rice

Grapes Alfalfa

Grain..... Hops

Hay

PRUNING DECIDUOUS TREES

Continued from Page 611

with surplus wood removed, the first four branches having been allowed to fork, these again being shortened in as indicated. Much of the growth of an apricot or peach tree would be more straggling and more horizontally inclined, and not growing so much towards the center as with the prune, but the principle remain the same, to cut back the growth the first, and if necessary the second year, to get the required vigorous shoots: then to select three or four, properly spaced, to form future head. Strong horizontal growth must be removed as such branches would either be torn by the team when plowing or would have to be taken off later with the saw. The main idea to bear in mind in this early stage of the tree's life is the goblet form of somewhat flaring habit.

To Continue Right

With a tree thus properly started the next step is the proper pruning of the spurs, or laterals. The main branches are gradually increased by forking as the diameter widens, but judgment must dictate how much and how often this forking may be allowed at the annual pruning. Small laterals or spurs will be thrown out along all the branches, some of them of weak pendulous growth. These must all be cut back to four or five buds, and subsequently it will suffice to leave only two or three buds as an annual increase. This keeps them sturdy and such spurs will bear large fruit close in to the trunk and main limbs. Further, by keeping the tree open as a "goblet" they will receive sufficient air and direct sunlight which is necessary if they are to live and bear good fruit. The peach is an exception to the spur pruning as it bears its fruit mainly on the strong shoots of previous summer's growth and so requires a heavier cutting annually to induce such growth.

Pears and apples will form fruit spurs on the main limbs, but the slender laterals will also form spurs if shortened in at the annual pruning. To expedite this, these laterals may be pruned in the summer and strong surplus shoots cut out entirely. Apricots, prunes, plums, almonds bear their best fruit on two-year-old spurs; the laterals, being annually shortened, will always have good fruit spurs of this age.

As the trees get older the wood growth decreases and the strength goes mostly to the production of fruit. At this time it may be well to prune the annual wood growth closer, which will encourage the trees to more vigor and the making of new wood.

The cherry is in a class by itself, most growers practicing the "no pruning" method, except a little thinning out of useless wood. Even with this fruit, however, the laterals, kept shortened in, will form fruit spurs, the habit of the tree being to form spurs plentifully the whole length of the limbs. It is incorrect, however, to think that the cherry is injured by being cut back, and it would be interesting to see an orchard pruned in goblet form as above outlined, instead of being allowed to attain all the height and diameter trees will. As a commercial proposition a moderate sized, pruned cherry tree is more appealing than a forest tree of huge dimensions, bearing a phenomenal crop. Some of the best cherry trees in our experimental orchard are those whose tops have been sawn off, the stumps being grafted over.

Pruning is not work for a novice nor for a careless hand: it requires much skill and experience and a good pruner takes an intense interest in his work.

NURSERY INSPECTION

Continued from Page 616

packing separates the twigs to the point where they are tied and makes certain that no caterpillar nests are present. This final examination is to be carried out by a special workman or by the workman who finally places the plants in the case—American Fruits.

Armstrong Nurseries

ESTABLISHED 1889

Why You Should Plant Olive Trees

In replying to the many inquiries coming to my office daily, and after a careful research for "facts" I am warranted in saying: **IT IS MORE ADVISABLE TO PLANT OLIVE TREES NOW, THAN AT ANY PREVIOUS TIME IN THE HISTORY OF THE INDUSTRY.**

Official statistics imply that were all the available olive land in the state planted and the trees in bearing, the supply would not equal the demand of the United States—hence, the only question to be solved is a systematic method of marketing the fruit through cooperation—which organization is well under way and will be in effect within a short time, thus assuring a liberal market at satisfactory prices, for all California Olives, which will be possible to produce; therefore

PLANT OLIVE TREES.

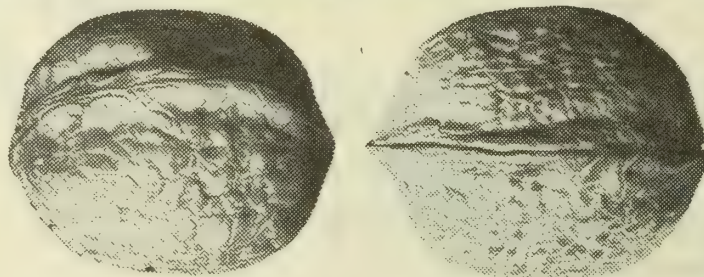
Write me for special prices on any number, size or variety of trees wanted, and withhold your order until you hear from me.

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California's Best

PLANT

Grafted Walnut Trees



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HENCE, IT IS GOOD ADVICE TO PLANT WALNUT TREES NOW.

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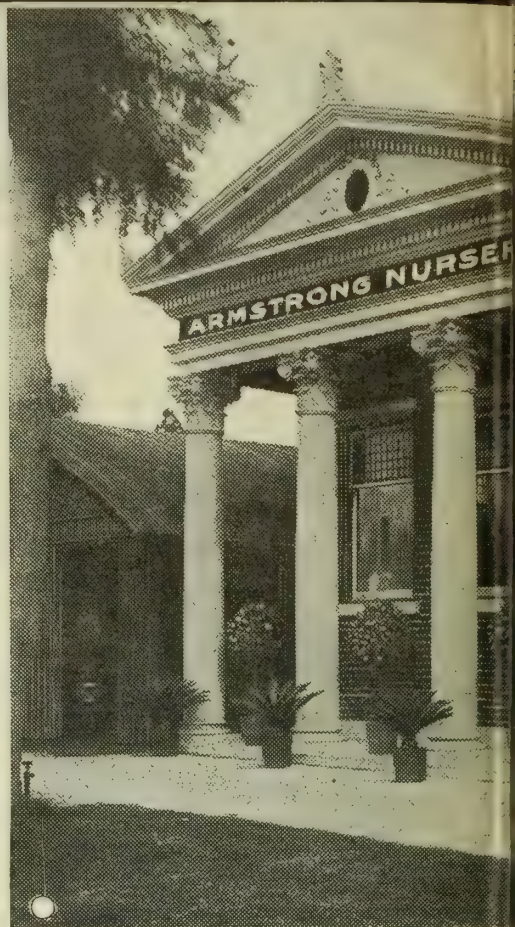
Can also supply **Almond, Pecan and Chestnut Trees** of highest quality. Write for free catalog of nut and fruit trees.

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THIRTY CHOICE VARIETIES

most suitable for family use, ripening early to late, producing ripe fruit from May to December.

These Home Orchard Collections are made up at digging time and no change in varieties can be made except at regular catalog prices. Each tree is properly labeled and consists of the following:

4 Peach Trees	1 Cherry Tree
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The experimental stage in growing Avocados is past—and growers are now assured of handsome profits—as several hundred dollars per tree are being realized in many instances; therefore all planters having suitable locations should not hesitate—but plant Avocado trees now—or soon.

**PRICES FOR BUDDED AVOCADO TREES
ARE MUCH LOWER THAN A FEW
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Can supply choice trees at from \$1.50 each and up, according to size, variety and quantity desired.

Write for a free copy of my 1916 illustrated and descriptive catalog, containing all the best and proven varieties. Make your selections therefrom and place your order early.

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Loquats: Can supply choice budded trees of Advance, Champagne and Premier varieties; also Seedlings grown from selected seed.

Guavas: Desirable for its luscious fruit; also as an ornamental. Can supply choice trees at from 25c each and up.

Feijoas: "Pineapple Guava" fruit of delicious flavor; trees hardy; very ornamental. Can supply choice plants, balled or potted.

Sapota: Beautiful evergreen foliage; fruit peach-like flavor; very prolific. One of these should be growing in your Home Orchard.

Cherimoya: "Custard Apple" of delicious flavor; much relished when eaten from the hand. Can supply choice budded trees, also seedlings from selected stock.

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MANY PRUNES TO BE PLANTED IN 1916

Written for California Cultivator
By Sacramento Valley Contributor

There is a great deal of interest in prune planting on lands along the Sacramento River this season. Trees have been contracted for a number of different plantings.

The land on which these trees are to be planted is very fertile river front loam, deep and well drained, and with an abundance of irrigation water available the success of the enterprise seems to be assured.

A number of men who are financing these orchard propositions are wealthy old timers who have made their money in this part of the state and who know the history of the existing orchards in the Sacramento River section, know what they have cost and what they have produced.

The trees to be planted are French prunes on Myrobolan root, this sort having proven most satisfactory.

There is some difference of opinion as to the distance of planting, some believing that because of the relatively large trees that will be produced under the conditions here they should be 25, 26 or even 30 feet apart. Others maintain that it will make more money to plant them closer, say 16 or 18 feet apart, with the idea of taking out alternate trees in ten or 12 or 15 years, but getting far greater crops during the first bearing years of the orchard.

Some will practice clean cultivation; others will grow corn and beans and alfalfa between the rows where plenty of irrigation water is available. The latter system has proven satisfactory and the crop returns a part of the cost of caring for the orchard.

The rich lands of the Sacramento Valley are gradually coming under intensive cultivation and this will continue for many years.

PURE SEED—RIVER REGULATION

At the recent meeting of the Riverside County chamber of commerce in Blythe in the Palo Verde Valley steps were taken to advance the interests of pure seed legislation. This county organization gives promise of being of material assistance to agricultural interests, not only of that county but of the state. At the same meeting resolutions were passed touching upon a subject of vital importance to people along the Colorado River and to producers in the great central valley of the state. These resolutions indorse the Newlands-Broussard river regulation bill:

"Be it resolved by the directors of the Chamber of Commerce of Riverside County, California, assembled in Blythe, California, on this tenth day of December, 1915,

"That we view with alarm the useless and extravagant waste of our nation's natural resources, especially that of the timber and water supply, and we deeply deplore the inadequate means for their protection and conservation;

"We favor any and all judicious legislation, federal, state and municipal, the object of which is protection and conservation of these resources,

"That we most heartily indorse the amendment to Bill S. 2739, known as the Newlands-Broussard River Regulation Bill, and recommend its passage and adoption and we further respectfully request our representatives in congress to work for and to support the same."

Copies of these resolutions were mailed to all chambers of commerce in the state with suggestion that they write their representatives in congress requesting their support of the bill.

CALIFORNIA FINE ART

We have a letter from Hamilton M. Wright, formerly editor of publicity work of the Panama-Pacific Exposition, in which he refers to the fact that California's Magazine is to issue a beautiful work, "Art in California", which will show the accomplishments of California artists and especially will it preserve many of the beauties of the great exposition. We hope its price will be such that it will be within the reach of all of us.

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ORANGE GROVE FERTILIZER DRILL

Live Stock and Dairy



FEAST OR FAMINE

Written for California Cultivator
By Special Live Stock Contributor



Either have so many fat hogs off the stubble and fat cattle and sheep from the ranges that we cannot handle them or there are so few available that we are forced to hunt high and low for them—it's either a feast or a famine." This is one explanation by a prominent California butcher for the present low price of meat animals on foot.

Continuing he said, "Our producers must find some way to regulate the supply of stock to our markets. If it could be strung out over a longer period it would be better for all. One

the same way. Another scheme is to cover the top with dirt and sow barley or oats on it.

The problem is to make a covering that will be as impervious to air as possible at the least expense. An Illinois farmer who has just come out to California for the winter says that he has recently finished filling his silos and that the same practice in sealing them has been used this year that has proven satisfactory during the past two. Black tar paper—the kind used in lining between the two outer layers of boards in Eastern houses—is laid in strips over the top of the mass of material in the silo. The ends are tucked down at the sides and the joints liberally lapped. Over the top of the joints and around



PRIZE WINNING STEER

This animal is proof of the good work being done at the university farm at Davis. Referring to this steer Prof. True writes: "This steer was a crossbred Hereford-Aberdeen Angus two years old. He won first in his class at the Panama-Pacific, was champion two-year-old, champion grade steer of any age in San Francisco and reserve to the grand champion of the show. At the recent Pacific International show at Portland

he again won his class, was champion grade or cross-bred, and again reserve to the grand champion of the show. He sold at auction to the Western Meat Company of San Francisco at 17½ cents a pound, which is the record price for a California steer and for the San Francisco market. Weighing 1670 pounds, this steer brought \$292.25. In addition to this during the fall he had won \$265 in prizes, so that he brought the university the neat sum of \$557.25."

way this could be accomplished would be for those who have fall feed—especially small farmers—to buy the half fat stock that is thrown on the market in the fall along with the fat stock and finish this feeder stock so that it would be available as well finished meat in the middle of the winter, say from Christmas on, when it is badly needed."

The stubble hogs will probably continue to come on the market in large numbers during September and October; the feed is available for them after harvest and it must be fed.

There should be a good tip in this situation for the man who grows hogs on the small diversified farm and who has greater control of his feed situation. He should plan to have his pork ready for market either before or after this run takes place.

Another factor that is said to be influencing the price of hogs at this time is the fact that our greatest buyers of lard and fat pork, Germany and Austria, are now out of the market. This has greatly lowered the price of these commodities.

COVERING SILAGE

Written for the California Cultivator
By Sacramento Valley Contributor

A number of things are recommended for coverings for silage. Rotten straw is often run through the silage cutter the last thing and thoroughly wet, then well tramped down so as to make a covering that will mold and make an impervious cover. Corn stalks with the ears snapped off are sometimes cut up very fine and run through after wetting, or with a liberal stream of water run in at the same time. Horse manure is used in

the sides wet corn silage is placed to hold the paper down and keep out the air. Last year only four inches of silage off the top of the silos was lost. When the paper was taken off when silo feeding began in the early winter it was thoroughly rotten. It required paper costing only 40 cents to do the job.

A GRAND BOAR

Regarding Superba, grand champion at the Panama-Pacific International Exposition, we quote the following estimate from the American Swineherd:

There is not a boar in the world who has won as many honors in the show ring (we mean at the best shows held) than the subject of our sketch, Superba. His last feat was carrying off the grand champion ribbon at the Panama-Pacific Exposition. Last season he was exhibited in his yearling form at the Iowa, Illinois, Missouri and Nebraska state fairs and won the first honors as well as winning at other fairs we could mention. He holds the same position in the Poland-China ranks in the show ring as Dan Patch does in the racing world—an undefeated winner. Superba has won 30 firsts and four grand champion ribbons. How's that for a record? Has never been beaten, weighs 925 pounds at two and one-half years of age in thin flesh. Superba was brought out by W. E. Willey of Steele City, Nebraska. He is sired by Skylark dam Anna Price 11th by Pawnee Lad, the best preserved sow for her age we have ever seen and who is still producing good things. Superba's winnings attracted great attention all over the United

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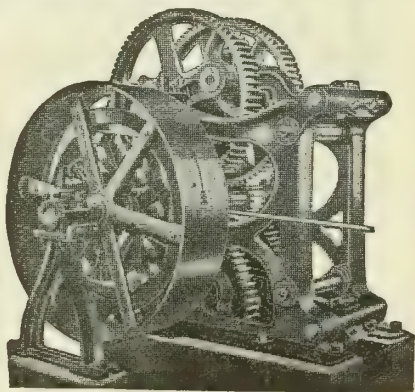
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In writing please mention the depth of your well and where located.

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States as they were remarkable, being given his place by competent judges such as Judge Chas. A. Marker, Thos. Shattuck, J. M. Kemp and others whom we can not call to mind, which proves he was entitled to his rank. W. H. Rough of Arlington Station, Riverside, commenced to negotiate for this prize winning animal and it was not long until the deal was closed at a cost of \$800 cash. Superba is like Dan Patch, a noted sire as well as a winner and when you have all these qualifications in a boar you have something. We expect Superba to sire a great string of winners that will carry the family on to more fame because we have seen sons of his that are of that character.

**THE CALIFORNIA SWINE
BREEDERS' SALE**Written for the California Cultivator
By W. S. Guilford

I want to call attention to the fact that everyone interested in the hog business in California should attend the first sale to be held by the California Swine Breeders' Association. Even if you are not in the market to buy any pure bred hogs at this time you owe it to yourself and to the industry to be there to attend the meeting and banquet at the Travelers Hotel on January 26, 1916, and the sale at the fair grounds the following day.

The success of this sale means much to the pure bred hog business in this state and on the Pacific Coast. The breeders of registered hogs in this territory are producing as good animals as there are in the various breeds, and the public sale is to be more and more the means of popularizing registered animals and bringing about their more general distribution.

At a public sale the buyer has the advantage of being able to buy animals at his own price and be guided in the making of this price by other discriminating buyers. If public sales are to be made a success—and they are without question—only animals of high quality can be consigned. There are many reasons why a good breeder cannot and will not consign a poor individual to a public sale. In the first place he knows that it is only by the remotest chance that an inferior individual brings more than it is worth. And it costs just as much as far as expenses go to sell a poor one for a low price as a good one for a good price. Then no breeder wants to get the name of producing poor animals, and this would be the sure result of sending a bad one to a public place. So that the buyer is really the one who is the most greatly benefited by the public sale system.

There will be a fine lot of hogs sold at Sacramento; it will be the greatest opportunity ever presented to the buyers of pure bred hogs in California.

EXERCISE IS ESSENTIAL

It is very necessary that the little pigs have plenty of exercise and all the sunlight that can be given them. If they do not get exercise, they will get fat and lazy and the usual result is the "thumps." This is caused by the fat getting so thick around the heart and lungs that the pigs find it difficult to breathe. They will be noticed heaving at the flank and gasping for breath. The best way to prevent this is to avoid overfeeding and make the young pigs take plenty of exercise.

The sow, in order to produce a large, healthy litter, should be in the best possible breeding condition. After she has been bred, careful feeding and management are necessary to develop successfully the litter she is to produce. It is well to keep a record of the date on which the sow was bred in order to know approximately when the youngsters are about to arrive. The gestation period of pigs is 112 to 115 days. It is good policy to be at hand in case the sow needs help, but she need not be helped if she is getting along well.

Ruby & Bowers of Davis reports the sale of 43 registered stallions and brood mares in the past 40 days. Ten stallions and mares were shipped to Honolulu, seven mares to Montana and two mares to Washington. The prices ranged around \$800 for brood mares and the stallions sold at \$2300 each.

A HOG FEEDING PROBLEMWritten for California Cultivator
By W. S. Guilford

This is the season of the year when the largest number of well fattened hogs go to market. This is because grain is more plentiful now than at any other time. There is in the aggregate a large quantity of barley, corn and other grains that is left in the field. Hogs feeding on this make satisfactory and economical gains, and all that reach a weight of 150 to 250 pounds or more go to market.

After this cheap, by-product feed is all gone there are generally a lot of pigs that do not get quite big enough, and under ordinary conditions on the average grain farm these go over to the next year—just about living through in most cases—until they are able to get fat on the grain stubble of the succeeding year.

Now the question is whether it is best to just let these pigs go or to feed them a little grain and finish them at a weight of 150 pounds or a little better some time during the winter.

If they are fed some grain this winter advantage is taken of the growth and fat they have already made, and even if the gains on grain cost four and one-half or five or five and one-half cents per pound the initial weight of the hog is made marketable in addition to the gain, and money is secured this winter when under the other system the hogs cannot be cashed until next summer. Then there is always the chance of the animals dying from disease or starvation and exposure if they are not fed a little, and if they are this small amount of grain that goes to keep the animal alive is gone as far as gains are concerned.

There are many cases where it will be good business to finish out these young hogs. But if it is to be done they should be dipped in Kresol or oil to free them from lice, and turpentine at the rate of a teaspoon to every 100 pounds weight should be fed three mornings in succession on an empty stomach to clear out the worms.

And there should be some dry shelter from the cold rains we are apt to have any time now.

And if there is no skim milk or alfalfa pasture available it will pay to feed tankage at the rate of five or ten per cent of the grain ration. It is remarkable what a difference this will make.

**TO TELL A SHEEP'S AGE BY
THE TEETH**

A lamb has eight small first teeth on the lower jaw. When the animal reaches the age of about one year the middle pair are replaced by two permanent teeth; at the age of about two the teeth on either side of these permanent teeth are also replaced by a permanent pair; at the age of three the next tooth on either side gives way to a permanent tooth; and at about the age of four the last or back teeth are replaced in like manner.

Briefly then a sheep with one pair of permanent teeth is a yearling; a sheep with two pairs is a two-year-old; with three pairs, a three-year-old; and with four pairs, a four-year-old.

After a sheep is four years old one cannot tell by the teeth about the age. However, one who is purchasing a sheep, says T. G. Paterson, of the animal husbandry division, Minnesota university farm, should see to it that the teeth have not become long and shoe-peggy in appearance.

ORCHARD SHADE

Shade is one of the greatest essentials to be provided for hogs. We have often referred to the orchard as naturally providing this condition with no detriment to the trees if the grazing is done right. Any tree in the pasture lot will of course furnish this shade which is needed to protect them from the hot sun during the middle of the day. In case trees are not there a shelter can be cheaply made, strong enough to withstand the winds and tight enough to bar the sun. It would be well to have this shade augmented by a burlap over the door to darken the interior to some extent so that flies will not annoy.—Denver Field and Farm.

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FIELD NOTES

Written for California Cultivator
By C. A. Briggs

Sixty acres of Modesto land owned by H. E. Cornwell now has on it a herd of 60 head (all ages) of dairy cattle, most of them being registered Holsteins. At present 31 are in milk, the product being sold to a high grade retail milk trade. As rapidly as possible all cows are being tested, nine having already been admitted to the A. R. O. Four that have just finished the seven-day test will be continued for the yearly test. The seven-day records are as follows: Senior year-

a practical farmer and breeder and is breeding along lines that the experience of a lifetime's work on dairy farms leads him to believe will produce the practical and profitable animal. The fact that probably every cow on his place will earn a place of honor on advanced registry goes to show that he is working along right lines.

* * *

Largest State Jersey Herd

The Rancho Dos Rios of Modesto has one of the largest herds of Jerseys in the state. There are now 427 head of all ages, 115 milking cows,



A Few Fine Ones From the Cornwell Herd

ling, age less than two years, two months after freshening, Gerben Beets 2nd, milk 216.5 pounds, butter 9.42 pounds.

Junior two-year-old. Senorita Ceres Mathilda, milk 280.4 pounds, butter 11.31 pounds.

Junior four-year-old. Abbie De Kol of East Bank 2nd, milk 486.8 pounds, butter 20.56 pounds.

Senior four-year-old, two months after freshening. Zoa Aaggie Pietertje, milk 403.1 pounds, butter 17.76 pounds.

Among the treasures of the Cornwell farm are two silver cups given to Hermana Mathilda Ciruela, who was the champion cow of the county at the Modesto fair. Mr. Cornwell is

98 calves and five herd bulls. This herd was established in 1867. Combination, Recorder, Stoke Pogis and Flying Fox blood speak for the lines of breeding carried on. The senior herd bull is Lord Dron, a grandson of Flying Fox. R. E. Watson, the manager of the ranch, is one of the young, energetic breeders that are so rapidly bringing the dairy industry of the state to the front. He is the president of the California Jersey Breeders' Association and a firm believer in the merits of the California strains of the breed.

The silo yields greater returns in proportion to cost than any other building on the farm.

TRIM THE HOGS' FEET

Written for California Cultivator
By W. S. Guilford

"I'd rather be those hogs than some folks' children," said a visitor at a prominent California hog ranch a short time ago. "I have heard of all sorts of attention being paid to dumb animals, but it sure looks to me as though the limit has now been reached when the hogs have to have their nails manicured!"

Now there was really nothing for our friend to be alarmed about. It was a rainy day anyway, so that the time would not be seriously missed even if it was wasted, but any one who could have seen the before and after of the hogs' feet that were "fixed" would agree that the time was well spent.

On some soft land in California there is not gritty material enough to wear the shell of the foot away as fast as it grows, so that if the surplus is not removed it is not long before the animal is walking well down on its heels and dewclaws instead up on the points of its toes as it should. After awhile the condition gets to be chronic and the animal become permanently "broken down" on its feet.

Some animals naturally have short, strong, pasterns; this part of the anatomy of some others is long and weak. The latter particularly need attention, but even the one with the strong conformation should have the toes clipped when they are growing too long.

It is an easy matter to throw a medium sized hog and lay it on its back in a good sized V-shaped trough. Then the excess foot can be cut off with a pair of sharp pruning shears. There will be no difficulty about telling how much to cut off, the horny part extending well out past the ball of the foot should be squared off so that the animal can stand upright on the foot. It is best to take off a little at a time; if too much is taken off blood will come—there is a "quick" in a hog's toe the same as in a person's finger, and if this is cut into the animal will be lame.

It is especially important that animals that are to be kept for breeders have their feet attended to as often as it is necessary; hogs that are to go to market do not matter so much, but it is a short job and all might as well have attention when the job is being done.

PURE BRED LIVE STOCK BUSINESS INCREASING

Editorial Correspondence

One good indication that many sales of pure bred live stock are being made throughout the state is the increasing number of animals seen on the express trucks at various stations along the railroads.

A few years ago it was a rare thing to see an animal in a crate at a shipping point, now it is very common to see hogs and sheep and cattle of all breeds.

It has been the history of all countries that greater prosperity is in store for any section where more and better animals are bred, and one of the most hopeful things in California is that the use of pure bred sires is becoming common and that in all parts of the state pure bred herds, flocks and studs are being established.

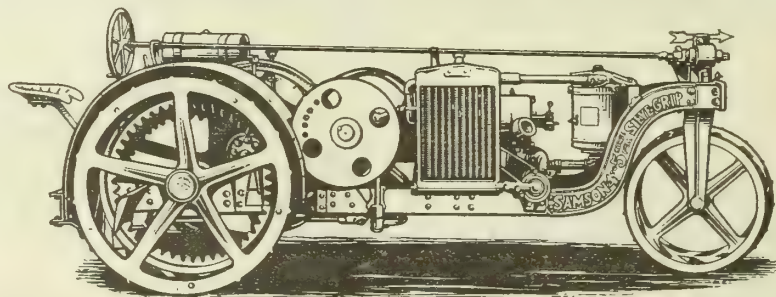
AYRSHIRE BREEDERS' ASSOCIATION

The 41st annual meeting of the Ayrshire Breeders' Association will be held in Philadelphia, Thursday, January 13, at two o'clock for the election of officers for the year ensuing. All persons interested in the breeding of Ayrshire cattle are cordially invited to attend this meeting.

It is the plan to visit the herds around Philadelphia the next day after the meeting.—C. M. Winslow, Secretary.

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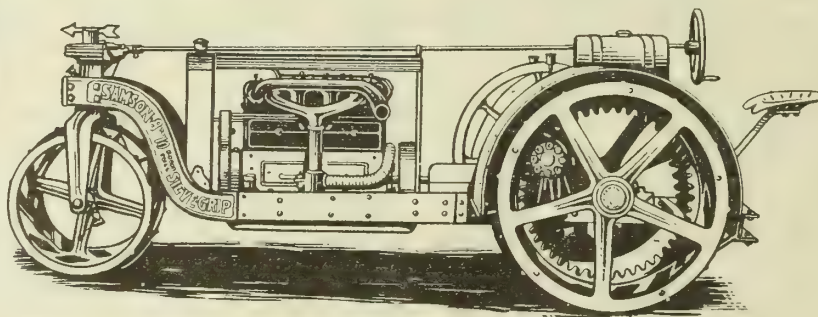
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COLD WEATHER DISEASES

Written for California Cultivator
By Jean A. Koethen

IT is doubtful whether roup should be classified as a cold weather disease or the opposite. Perhaps it might be called a damp weather disease, for it is nearly as prevalent in the foggy days of June as in the wet days of January. In fact no month is free from its ravages if only conditions be right.

Last summer I was amazed to find one of my young turkeys suffering with roup. I had believed that no bird that slept in the open and ran on well drained ground could have roup, but here was one that from the time it was weaned had roosted on top of a six foot fence and had never seen any soil but the driest of decomposed granite, manifesting every symptom of swellhead. Obviously the fault was not in external conditions but in the bird itself, and here is where our attempts at diagnosing diseases too often fail.

Two factors must always be considered when we are confronted with roup, the sanitary conditions surrounding the bird and the constitution of the bird itself. Rousy stock, i.e., stock descended from rousy ancestors, with a tendency to roup in its very constitution, is hopeless. Hence the first step in ridding a flock of roup is to begin, as Dr. Holmes advised educators to do, with the ancestors of future generations.

Two rules should be observed by every keeper of poultry: Never use in the breeding pen any bird that has ever had any sort of a cold; never keep a rousy bird on the premises. If the bird does not respond immediately to treatment kill and bury it deep.

Roup seems to be a sort of general term for every kind of a cold, with the exception perhaps of bronchitis and pneumonia. A watery discharge from the nostrils, swollen eyes or head or face, diphtheretic spots in the throat, cheesy deposits under the eyes, are all generally included under the name of roup. The first symptom may be a watery discharge from the nostril or a swollen look about head and eyes, or it may be merely depression and disinclination to move. Sooner or later, however, there appears a peculiar, heavy fetid odor, which is always characteristic of roup. No odor, no roup, is axiomatic. In general if there is any discharge from nostril or eyes, any swelling of the head or any noticeable odor, roup may be safely diagnosed. Some of the books make a distinction between simple catarrh, which is characterized by a thin discharge from the nostril, and roup, in which the discharge is thick, but the distinction is not observed in practice, for the thin discharge of simple catarrh rarely fails to develop into the thick discharge of roup.

When the case of a sick fowl is laid before me I am almost invariably asked, "Give cause and cure." Now the cause of illness is almost as hard to find with chickens as it is with human beings. There are always complications. We say, "Oh, he ate something that disagreed with him; probably he was overtired, too, or took a little cold, and anyway his liver wasn't working as it should." An attack of roup may have just as many causes. Poor ventilation in roosting quarters is one; dark, filthy houses is another; poorly drained runs or standing water in runs is another; overcrowding is a fourth. And, "anyhow", one is tempted to say, "the bird wasn't feeling exactly well in the first place." Perhaps there had been overfeeding, too little exercise, a shortage of green feed, careless breeding. Whatever lowers the tone of the system, whether it be from without or within, renders it liable to attacks of roup. Whatever increases the constitutional vigor of the bird, whether it be perfect sanitation or discriminating

selection of breeding stock, increases its resistance to the disease.

Roup is considered a contagious disease, and for this reason it is wise to remove sick birds from the flock as soon as symptoms are noticed, but it often happens that vigorous birds, although exposed, do not take it. Vigor brings immunity from this, as from most diseases, and birds that are kept under the strictest sanitary conditions, on well drained soil, breathing fresh air day and night, are not subject to roup, though an occasional sporadic case may occur among the weaker members of the flock.

The matter of drainage plays a very large part in the prevention of roup, just how large I am not prepared to say. In my own locality, where nearly all poultry houses are on a southern slope, protected by hills from the chill currents of air that blow in from the ocean, roup is practically unknown. The young turkey referred to above is the only case I have had in four years, and it was not of my own breeding nor did other birds contract the disease, although I made no attempt to isolate the sick one. In a hollow a half mile away where the wind draws day and night through a small canyon I saw, the last time I passed that way, a number of rousy birds. When poultry people learn that to avoid this scourge of poultrydom houses and runs must be high and dry and night quarters sunny and well ventilated, I venture to predict there will be very few epidemics of roup.

As soon as a case of roup is discovered or suspected the bird should be placed in the sunniest, driest place available. If it is not too ill to move about and eat a green, sunny range with airy coop at night will cure many light cases. A dose or two of quinine in one-grain doses is a good first aid to throwing off the disease, and a teaspoon of Epsom salts once a day in moist mash helps to clear out the system. Dipping the head for a few seconds in a pail of water colored red with potassium permanganate cleanses the air passages and is one of the best remedies. Dip the head twice a day till the discharge disappears. If there are white spots in the throat swab, with peroxide of hydrogen. When there is great depression and fever the case is almost hopeless. Quinine may possibly relieve, and there are many patent roup cures that are recommended, but when a bird remains in this condition for several days it is just as well to kill it. Such birds are rarely worth keeping.

Bronchitis

Sometimes in a spell of severe or wet weather a bird will suddenly develop a loud rattling in the throat; in severe cases it mopes and refuses to eat. This is bronchitis and must be treated promptly or pneumonia may develop. I found such a case among my pullets one morning a few weeks ago after a high wind and rainstorm. She moped on the roost and seemed to pant for breath. I removed her at once to the feed house and gave her a bed of dry straw and a little hard grain and lettuce to tempt her appetite. A good dose of olive oil saturated her throat externally and internally and was repeated in a few hours. For either chickens or children there is no better treatment in bronchitis than olive oil in liberal doses. I had no quinine in the house but did have some two-grain capsules which I knew contained mostly quinine. One of these was administered, not in the capsule, however, for I cannot swallow such a capsule and did not believe she could. She remained quiet in the house for a while but by noon was trying to get out. I let her out, for the sun was warm, meaning to return her to the house before night, but by feeding time I could not distinguish her from the rest of the flock.

Chicken-Pox

Of all the troubles that follow in the wake of cold weather none is so prevalent or so distinctively a cold weather disease as chicken pox. It comes winter after winter, frequently to poultry yards where it has appeared before, and sometimes to flocks that are isolated, and it is said to be more prevalent in a warm, wet winter than in a cold, dry one. Sometimes it appears in a very light form so that the birds are hardly inconvenienced, and at other times it is so severe that the loss is great.

Chicken pox may always be known by the scabs or nodules which appear on the comb and about the head. I cannot do better here than quote Dr. Salmon:

"The eruption appears as round, oblong or irregularly shaped nodules from the size of a pinhead to that of a pea or hazelnut. They are seen especially about the beak and nostrils and on the comb, the eyelids, the wattles and the ear lobes. In some individuals, and particularly in pigeons, the eruption is more generalized and is found on the skin and other parts of the body, as the neck, under the wings, on the rump and about the cloaca. Here the nodules may become larger than on the head.

The nodules begin as small red or reddish-gray deposits with a shiny surface and gradually enlarge, while the color changes to a yellowish, brownish or dark brown and the surface dries and becomes shriveled, uneven, and warty in appearance. Owing to the number of nodules and the extension of the inflammation, large patches of skin become thickened and covered with hard, dry crusts, closing the nasal openings or the eyelids and making it difficult even to open the beak.

In the more malignant cases the eruption is generalized over the surface of the body, the nodules are larger, and there is a diffuse inflammation and thickening of large areas of skin. If the crusts are rubbed or scratched off by the fowls there occurs from the ulcerous surface a discharge at first watery, but later thick, yellowish and viscid, which soils the feathers and, if abundant, gives off a disagreeable odor. This type of the disease is accompanied by fever, rapid loss of flesh and prostration, and frequently causes the death of the victim. In the most malignant cases, especially with pigeons, the eruption extends to the mucous membrane of the eyes, nostrils and mouth, causing a diphtheretic inflammation that is generally fatal."

I have given this description so fully because it is of the utmost importance that the disease be recognized as soon as it appears. If affected fowls are at once isolated and the premises thoroughly disinfected an epidemic may be averted, but this is hardly possible if the sick birds remain in the flock even a few days.

Chicken pox is usually treated by removing the scabs or crusts on the nodules and touching the sores with a feather dipped in undiluted creolin, or with a saturated solution of boric acid or with tincture of iodine. The sores may then be dusted with iodoform. In light cases anointing with carbolated vaseline is sufficient. Only

Continued on Page 631



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Roseneath Egg Ranch
Arlington, Cal.

Baby Chicks—Wyckoff and imported English White Leghorns only. If you want the best chicks send ME your order NOW for spring delivery.

Oswald Miller Robertson
(Established 1907.)

FISH GLOBE A-1 MEAL
Feed Globe "A-1" Fish Meal for Eggs
SEND FOR FREE SAMPLE AND PRICES
Globe Mills, Los Angeles

BABY CHICKS and EGGS

We will book your order for Chicks or Eggs for future delivery.
EXTRA SELECTED BLACK MINORCAS & WHITE LEGHORNS OUR SPECIALTY
Our Chicks are hatched in the
BEST VENTILATED HATCHERY IN CALIFORNIA
INSTRUCTIONS HOW TO RAISE CHICKS FREE

Hicks Jubilee Hatchery, Route 2, Box 22,
Petaluma, California

Baby Chicks

We will book your order for White Leghorn or Black Minorca Chicks for 1916 delivery. We guarantee safe arrival of a full count of strong, vigorous chicks. Write for prices. When in Petaluma visit our hatchery.

Lasher's Hatchery

3-15 Kent St.

Petaluma, Cal.

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FARM LANDS FOR SALE

Farm Lands—20 Years to Pay. Fertile farms in Western Canada offered by Canadian Pacific Railway Company. Productive soil; good climate; ready markets; fine churches and schools; unexcelled transportation; all conveniences and opportunities of best farming districts anywhere. Prices \$11 to \$30 an acre; irrigated land from \$35. Loan of \$2000 to assist practical farmers in irrigated districts. Twenty years to pay—or sooner at your option. Long before your final payment is due your farm will have paid for itself. Also some improved farms with houses, barns, wells, fencing, and crops now growing on them on the same favorable terms. Interest in all cases only 6%. This offer is based on good land; we offer these terms because we know a farmer on our lands can "be successful"; he can live well and save enough to pay for his farm. Western Canada lands are naturally suited to growing grains, fodders, vegetables, dairying and raising horses, cattle, sheep, swine, poultry. Cash in on the high grain prices. Don't delay; the best lands will be taken first. Write today for free handbook and full information to J. S. Dennis, Assistant to the President, Department of Natural Resources, CANADIAN PACIFIC RAILWAY, Calgary, Alberta, Canada.

Carlsbad Irrigated Farm Land—Bordering ocean; on state paved highway and Santa Fe Ry.; 80 miles south of Los Angeles; government records show Carlsbad warmest in winter, coolest in summer of any spot in Cal.; deep sandy loam, model water system; low rates; lemons mature in summer when price is highest; immense profits in fruits and berries adaptable to coast territory; winter vegetables without competition; minimum temperature 1914 was 41 degrees; tomatoes, chili, peas, beans, eggplant, rhubarb, etc., bring \$150 to \$400 per acre; easy purchase terms. South Coast Land Co., G. Buxton, Sales Agt., Carlsbad, Cal.

FARMERS WANTED

VICTORIA, AUSTRALIA, offers special inducements. Government land, water, railways, free schools, 3 1/2 years to pay for farms adapted to alfalfa, corn, sugar beets, fruit, etc. Climate like California. Ample markets. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

One Hundred Acres \$75 Per Acre Rice Land, Best in State for Sale—In a locality where rice is being grown now profitably. This soil is suitable for grain and alfalfa; in a section of Kings County which stands preeminent in farming circles for large crops. Write for particulars or call. Large or small tracts on easy terms. Hanford Real Estate Co., Hanford, Cal.

Adjoining the town of Concord and our farm are small tracts, just the thing for poultry, fruit and berries, which can be sold on rental terms, and we will assist buyers in many ways to get started in the poultry business. VALLEY POULTRY FARMS, Box 188, CONCORD, CAL.

Ten Acres Navels, 15 years old, 108 trees per acre. Water interest in well, cost about \$9 per acre. Concrete pipe line with standards. Early fruit. No smudging. Trees in good condition. Price \$6500. No trade. Address P. O. Box 806, Los Angeles, Cal.

For Sale—Twenty-acre ranch. Flowing water worth price asked. Five-room modern bungalow; forty by sixty hay barn; stock barn. Fifteen minutes' walk to schools, depot, post office. Address S. S. Lee, Lancaster, Cal.

Farms for Sale, Trade, Rent; any state; list free. 167 Farmers' Exchange, Denver, Colo.

For Sale—Forty acres level, well watered land, two miles north Waukena, Tulare Co., Cal., taken under mortgage for \$35 per acre. G. F. Stevenson, 329 Laughlin Bldg., L. A.

Free Booklet. County Sectional Maps showing U. S. Land, \$2.50. Any Co. State Map, \$2.50, showing 600,000 acres SCHOOL land. Jos. Clark, Sacramento. **2500-Acre Improved Grain and Dairy Ranch in Klamath Co., Ore.** All bottom land, well watered. Owner, 420 Palm St., San Diego, Cal.

Wanted—Farms; have 2357 buyers. Describe your unsold property. 167 Farmers' Exchange, Denver, Colo.

MISCELLANEOUS

A Beautiful White self-bleaching, hard water soap; odorless and will not chap the most delicate hands. I am a hotel man and it was necessary to find a soap that would bleach and do perfect work and not ruin the linen. I tried many kinds of soap, but they were not satisfactory, so I began to experiment, and, after a number of years, I found the secret. It costs a fraction compared with the common soaps. I can make 50 pounds of bar soap for 40c. It positively does all I say and is easily made; just follow directions. I will mail this formula to any address on receipt of 25c in coin. E. C. Baxter, P. O. Box 421, Idaho Falls, Idaho.

"Smith's Pay the Freight"—To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. Smith's Cash Store, 112 Clay St., San Francisco.

Dried Figs—Calimyrna seven cents; black 5 cents per lb. for 25 lbs. or more. Tribble Nurseries, Elk Grove, Cal.

RABBITS

Richey's New Zealand Red Rabbits won again at Riverside Fair, 3 medals and 3 ribbons. Beautiful B. Rock Cockerels for sale \$5.00 each, from Blue Ribbon stock. MRS. C. A. RICHEY, R. 8, Box 557, LOS ANGELES. Send 25c for booklet "Making a Living on an Acre" and "Care of Rabbits."

LIVE STOCK

Big Type Poland Chinas—December and January are the best months to breed sows for spring litters. Don't you need a better boar—one that will sire pigs that will grow faster and larger and get ready for market quicker on the same or less feed? You can't make any money at the present market price unless you raise good ones. Scrubby scrubs never pay. One of my May boars, sired by IOWA WONDER, will pay you well. Price \$20.00 each. They will not last long at that price; better hurry. Bred sows, bred gilts, open gilts. One to 2 carload. 600 head to select from. Satisfaction or money back. Registered and transferred free. Geo. A. Smith, Corcoran, Cal.

Billiken Herd of O. I. C. Swine—The big white kind. Early maturing, weight carrying; everything immunized against cholera by the simultaneous treatment. Pigs of both sexes from March, April, May and June farrows. Sires Chief Again, Iowa Boy, Missouri Lad and Woodview Earl. Dams are all of the big, smooth type and very prolific. A few bred sows about ready for their second and third litters. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

Rancho Rubius Herd Durocs won first under six months; Junior Champion; Reserve Grand Champion; Champion Sow bred by exhibitor, second sow under two years, and other premiums at P. P. I. E. A few bred gilts and service boars for sale. Place your orders now for weanling pigs. Elmer Lamb, Ceres, Cal.

Young Pure Bred Holstein Bulls for sale, sired by Prince Beauty Pierteje Segis. Some of these are 10 months old, others are calves 3 and 4 months old. All grand individuals and out of good ancestors. Prices reasonable. Write for breeding and prices. Laguna Stock and Dairy Farm, E. K. Putz, Prop., Laton, Cal.

Del Dayo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding, BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

For Sale, Bull—Name: Fancy Sir Raleigh, No. 127819, 15 months old. Sire: Nancy's Raleigh—H. R. No. 101312; bred at Good Hold Farm, Mentor, Ohio. Dam: Brutus' Fancy, No. 293925, forty-pound cow. Price \$75. W. J. Cole, R. 1, Anaheim, Cal.

Blue Ribbon Herd Duroc-Jersey Hogs, service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F., 1915, prices. John P. Daggis, Modesto, California.

Sturdy Young Pigs from thoroughbred registered prize winning Berkshires, purchased at State Fair 1914; prices reasonable. Write for circular. R. & L. Ranch, Lancaster, Cal.

Six Young Duroc-Jersey Registered Boars for sale; sired by Col. Climax. He is a grand Eastern importation. Prices reasonable; immediate delivery. F. E. WHITE, R. D. 2, Hanford, Cal.

Fancy Belted Pure Bred Belted Hampshire Boars and Sows. Good, sound young breeding stock; registered. Write for prices. Ben F. Thorpe, Mgr., C. A. Canfield Ranches, Bonsall, Cal.

Duroc Jersey Hogs—Young stock for sale. Immediate delivery. Get my prices. R. F. McDowell, Buena Park, Cal.

For Sale—Thoroughbred Duroc-Jersey Sows and Gilts, at reasonable prices. Healthy, first class stock. F. T. Harris, El Centro, Cal.

For Sale or Trade for stock cattle, a first class imported Belgian Draft Stallion. For particulars address P. O. Box 73, Lindsay, Cal.

For Sale—At all times, Jacks and Stallions, driving and saddle horses. Price and stock guaranteed. Phillips and Kingsbury, 2318 G Street, Sacramento.

Registered Berkshire Weanlings, both sexes, \$10; subject to inspection. Cash on delivery. J. M. Bomberger, Modesto, Cal.

Brood Sows for Sale—200 simultaneous treated Duroc Jersey Brood sows. Weight 200 to 300 lbs. each. \$20 to \$25 each. Post Card Ranch, Corcoran, Cal.

Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred, finest stock. C. H. Thompson, Navato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Ricconi Bros., Mountain View, Cal.

Registered Shires—Blackhawk Stock Ranch. Importers and Breeders. Easton & Ward, Burlingame, Cal.

Duroc-Jersey Boars, ready for service, low price. Sired by 800-pound boar. Ed E. Johnson, Turlock, Cal.

Poland Chinas—Young Stock; either sex. Write for pedigree. Reasonable prices. Edw. A. Hall, Watsonville, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

HORTICULTURAL PRINTING

Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Krueberg Press, 237 Franklin St., Los Angeles.

POULTRY

Altho Mahajo Brown Leghorns hatched late, managed to win 4th Cockerel (2 entries), 5th Pullet (3 entries), 4th Pen (1 entry), at Panama-Pacific Poultry Show—160 birds from six states competing. Incubator chicks from range flock (pullet bred), \$20.00 per hundred, hatching eggs \$10.00 per hundred, \$2.00 per setting of 15. Cockerels and pullets from \$5.00 each and upward. Hatching eggs from birds mated for exhibition type \$5.00 per setting. Please specify whether cockerel or pullet matings are wanted.

MAHAJO FARM,

P. O. Box 597, Sacramento, Cal.
"We'll play fair."—You can have our catalogue.

Baby Chicks from my thoroughbred flock of S. C. White Leghorns, carefully selected for laying and standard qualities, \$9.00 per 100, \$85 per 1000. Hatch eggs \$5.00 per 100, \$45.00 per 1000. I have 1400 laying hens and sell between 20,000 and 25,000 Baby Chicks every season. All orders receive my personal, most careful attention. Only eggs from my own flock and from hens that are two and three years old used in my incubators. Correspondence solicited. J. R. HEINRICH, Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

Make Big Money with our White Orpingtons. Best breed for every need. Lay most when prices are highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 648, Los Angeles.

MacFarlane Strain White Leghorn Eggs \$1.50 per 15, \$2.50 per 30, \$5.00 per 100. Chicks Dec., Jan., Feb. 12c each, afterward 10c. Order now, any quantity. Cockerels \$2.50. Big plant, lowest prices, stock better than ever. Catalog free. Correspondence solicited. Newton Poultry Farm, Dept. 3, Los Gatos, Cal.

Penn's Quality Barred Plymouth Rocks. At the World's Poultry Exhibition, San Francisco, our WESTERN BRED Rocks ranked among the best in the WORLD, both in UTILITY and EXHIBITION points. Catalogue free. GOLDEN RULE POULTRY FARM, St. Helena, Cal.

Baby Chicks—All sturdy youngsters from good stock. Hatched right and arrive safely. R. I. Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders filled now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

Brown Leghorn, White Leghorn day-old chicks that are well-hatched and strong from healthy vigorous breeders. SAN JOSE HATCHERY, 371 Meridian Road, San Jose, Cal. "Chicks well hatched are half raised."

Baby Chicks—Settings, 100's, 1000's. Rhode Island Reds, White Leghorns. Reasonable prices. Our own heavy layers. Hatched right in finest hatchery in the world at Pebbleside Poultry Farm, Sunnyvale, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

S. C. Rhode Island Reds, Lester Tompkins and Winslow strains eggs for hatching. Day old chicks. Prices on application. Rainescourt Poultry Ranch, Zelzah, Calif.

A Few Silver Campine Cockerels bred from heavy laying stock; Hering strain; fine shape, beautifully marked, \$3 and \$5 each. VALLEY POULTRY FARMS, Concord, Cal.

Petaluma Hatchery—Capacity 16,000 chicks a week. Five varieties. Can ship to points reached in three days. We challenge the hen. Send for circular. L. W. Clark, Petaluma, Cal.

Barred Rock Cockerels, \$2.50 each. Am now booking orders for Rhode Island Red and Barred Rock Chicks for Feb. delivery, 15c each. G. L. Hawley, Madera, Cal.

S. C. White Leghorns—Hoganized; bred to lay. Booking orders now for hatching eggs. \$6 per 100; \$50 per 1000. R. H. Dickinson, Pine Tree Poultry Farm, R. F. D., Los Gatos, Cal.

White Plumage Poultry Farm and Hatchery sells White Leghorn baby chicks, full of vigor and healthy, from our own stock. Circular tells it all. Exeter, Cal.

S. C. W. Leghorn Cockerels, pairs and trios; also booking orders for DAY OLD CHICKS; all from the highest utility fowl. Jos. E. Blackshaw, San Jacinto, Cal.

First Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeve Hatchery, Turlock, Cal.
Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

WANTED

Wanted—We want every person using wood or coal as fuel to write us for our free descriptive matter on how to save from 20 to 40 per cent in cost of fuel. No obligation on your part. Address Box 133, Visalia, Cal.

Wanted—Water development, springs, tunnels, streams and ranch irrigation work. Prices reasonable. Address S. S. Lee, Lancaster, Cal.

Wanted—Wor. as foreman on ranch. Experienced in fruit and stock work; sober, American, small family. Address Box D, Cultivator office.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

Wanted—To hear direct from owner of good farm or unimproved land for sale. C. C. Buckingham, Houston, Texas.

TREES

Reliable Home Grown Fruit Trees—All leading varieties, including 20,000 Royal Apricots, 30,000 Phillips and Tuscan Cling Peaches, 15,000 Bartlett Pears. Also full line of ornamentals. All stock is well rooted, first class and true to name. Send us your list of wants for lowest quotations. Orange County Nursery & Land Co., Fullerton, Cal. Sales yard on State Highway opposite Anaheim Sugar Factory.

Walnut Trees—Late blight resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placencia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

Tribble Nurseries, Elk Grove, Cal.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble Mayette, Kern Parisienne, Gladly and Improved Franquette, 19 other walnut varieties. Fine stock of almonds, prunes, Bartlett pear on resistant roots and other fruit trees and plants. New list ready.

For Sale and Exchange—765 walnuts, Placencia Perfection on black roots, 40 cents each; 2500 Mission olives, 9 cents each; San Bernardino County delivery. Will exchange Valencia, lemons, or equities that carry themselves, or for clear vacant land. O. E. Van Slyke, Azusa, Cal., or 916 Story Bldg., Los Angeles.

For Sale—Grafted Walnuts, soft and black root; apricots, oranges, lemons and all leading varieties of tree stock, grapes, roses, ornamentals. Get my prices. A. R. Marshall's Nurseries, Cor. 3rd and Bush Sts., Santa Ana, Cal. Phone Pacific 1054-R.

Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

Olives Are Our Specialty—Our stock is home grown and carefully selected from the best strains of Missions and Early Manzanillos. Every tree guaranteed. Get our prices. H. Detmers & Son, Exeter, Cal.

Eureka Walnuts Are the Best—Grafted on native black roots. Our prices will surprise you. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Alamansor St., Alhambra, Cal.

For Sale—First class, two-year-old olive trees, Mission and Manzanillo, 4 to 8 feet; clean, also several thousand rooted grape vines. Pierce, Isabella or California Concord. Address Box 673, Barbour Ranch, San Gabriel, Cal.

Apricots, Sugar Prunes and Olives—All first class stock. Royal, Blenheim and Tilton Apricots, Mission, Manzanillo and Ascolano Olives. Correspondence invited. C. E. Moyer, Hemet, Cal.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoas, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

Fig Trees. 25,000 two-year-old trees from 2 to 6 ft. high. Seventeen varieties. Write for price list. C. C. Terbush, R. F. D. 2, San Gabriel, Cal.

Orange Trees—Right prices, true to name; terms to responsible parties. Strathmore Citrus Nursery, Strathmore, Cal.

For Sale—Fancy apricot trees raised in Hemet Valley. Wholesale prices. Write L. Kendall, 151 S. Meredith Ave., Pasadena, Cal.

Peach, Plum and Apricots, fine, thrifty trees; none better; low prices. Write Dr. F. M. Jenkins, 1498 Arrowhead Ave., San Bernardino, Cal.

For Sale—Mission Olives, Burbank Lemons, Seedless Grapefruit. One mile north of Exeter, Cal. Frank K. Asano, Box 376, Exeter, Cal.

Eureka and Placencia Perfection Walnut Trees grafted on black root. Fine trees from first class stock. Jos. P. Thompson, Santa Ana, Cal.

Budded Avocados—Field grown; all varieties. Write for prices. Newberry-Sherrick, R. D. No. 2, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

Eureka Walnut Buds For Sale—Enter your order now for early delivery. E. Holve, Fullerton, Cal. Phone 214-W.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Prune Trees 12c, Walnuts 30c. Cash Nursery, Sebastopol, Cal.

TURKEYS

For Sale—Bourbon Red turkeys and eggs for hatching. My birds won all the honors in the Alameda County Poultry Exhibition in Oakland 1914 and just as fine this year. A. E. Balmer, Alhambra Valley, Martinez, Cal.

Mammoth Bronze Turkeys—THE BEST IN THE WEST. Extra special prices. Further information cheerfully given. Write now to secure best birds. Geo. A. Smith, Corcoran, Cal.

Giant Bronze Turkeys from choicest prize winning stock; quality unexcelled. Special price on young hens per half dozen. Mrs. Nellie Hart, Holtville, Cal.

Mammoth Bronze Turkeys—Prize winning stock, P. P. I. E. Mrs. H. B. Kimball, Farmington, Cal.

White Hollands—Thoroughbreds. Buy your breeding stock now. Rockwood Farm, Box 201, R. 6, Santa Rosa, Cal.

FOR RENT

For Rent—Small ranch one mile from city limits. Rich land, suitable for hogs and dairy. Fine opportunity for right man to start with small expense. Write Box 414, Visalia, Cal.

MACHINERY

USED RANCH MACHINERY
USED WINDMILLS GUARANTEED
 8, 10, 12 and 16-ft. sizes.
NEW & USED TANKS, GALV. WOOD
 1000-gal. galv., \$19.50; 2000, \$29.50. Also
 all sizes in new and used wood tanks.
GAS ENGINES AND PUMPS
ABSOLUTELY GUARANTEED
 1 H., \$20; 11 H. White Middleton, \$175;
 12 H. Lambert, \$175; 18 H. Lambert,
 \$195; 35 Lambert, \$350. Many others as
 cheap. Fine double acting LUITWEILER
 18-inch stroke head, cost \$610, for \$345;
 double acting Ames head, \$125; cen-
 trifugal, rotary and plunger pumps of all
 kinds.

USED & NEW RANCH TOOLS.
 New 8-inch steel beam plows, \$5.50; 10-
 inch, \$6.50; spike harrows, \$8 to \$12; sin-
 gle disc harrow, \$24; double disc, \$29;
 horsepower gear, \$15. Fine 16-inch rid-
 ing sulky plow, \$29; fine mower, \$22.50;
 rakes, \$18 to \$21; horse power baler, \$35;
 Emperor power baler, \$195; Southwick,
 like new, \$350; hay loaders, potato dig-
 gers and cutters; planters, rollers, 2-ton
 Knox auto truck, \$95; fine Weber wagon,
 \$39; tractor plows and discs; sundries.
DEMMITT CO. OFFICE 120 N. MAIN.
YARD, 816 YALE, LOS ANGELES.

For Sale—Pumping plants, 10 H. P. en-
gine with magneto, No. 2 Ames head,
 80 ft. 6 in. pipe and rods, 5 in. cylinder
 and belting complete, \$235.00; 18 H. P.
 engine with magneto and No. 5 Vertical
 Krogh pump, \$225.00; 10 H. P. engine
 and No. 3 Vertical Krogh pump, \$175.00.
 Ranchers' Exchange, 1630 So. Main St.,
 Los Angeles, Cal.

For Sale—Used and new Gas Engines, 2
H. P. up, rebuilt and fitted with modern
equipment. 22 years' experience enables
us to repair and rebuild Gas Engines cor-
rectly. Get prices. Lloyd, 806-808 N. Main
St. Los Angeles. F7020—Broadway 4103.

For Sale—Used windmills, gas engines,
pumps, pipe plows, discs, harrows,
mowers, rakes, 16 ft. Aeromotor, \$85.00;
 5000-gal. Redwood tank, \$35.00; 1 H. P.
 motor, \$25.00; 4-in. surface pipe, 6 1/2 c. it.
 Ranchers' Exchange, 1630 So. Main St.,
 Los Angeles, Cal.

For Sale—Bull Tractors on Time Pay-
ments. Best small tractor made for
all farm purposes. P. J. WEISEL & Co.,
Anaheim, Cal.

SEEDS AND PLANTS

Strawberry Plants of the following va-
rieties: Gold Dollar (extra early, fine,
our leader.) New Oregon, "Morse" and
the famous Etterbures No. 80, and No.
 112, price 75c (postpaid) per 100, \$3.50
 per 1000. Foreman Bros., Corning, Cal.
Sudan Seed—Pure, re-cleaned, clear of
 Johnson grass, 15c per pound; in lots of
 100 pounds or more 10c per pound;
 money to accompany orders. Book of
 instructions furnished with each order.
 F. M. Grundy, Lubbock, Texas.

Alfalfa Seed—New crop. You want the
best. We grow it. We sell it. You
buy it. Write or wire for quotations,
samples and information. V. A. PETER-
SON ALFALFA SEED COMPANY,
ARBUCKLE, CAL.

Buy Pure California Desert Grown
Sudan Grass Seed (and avoid South-
ern states Johnson grass). Send \$1.00
 for sample 3-lb. package, postpaid. Special
 price on larger quantities. R. & L.
 Ranch, Lancaster, Cal.

Burbank Spineless Cactus—Hardest va-
rieties, "Melrose" and "Special." Strong,
 matured slabs, \$8.50 per 100; \$50 per
 1,000. Labranza Ranch, Athlone, Merced
 Co., Cal.

Sudan Grass, local grown without irriga-
tion. Seed for sale in small quantities
 at 30c per lb. delivered in California.
 Write for quantity prices. Z. M. Dickev,
 Dinuba, Cal.

Thoroughbred Strawberry Plants—Early
Ozark, Gold Dollars, Wm. Belt, Good-
ells, Kellogg Prize, Marshalls, Magoons.
 \$2.50 per thousand. Mr. John Christian-
 sen, R. F. D. 2, Canby, Oregon.

Rhubarb Plants—We have some choice
plants to offer in large or small lots.
 Get our prices. Currier Bulb Co., Sea-
 bright, Cal.

White Rose Seed Potatoes for early
planting, \$1.50 per hundred lbs. Theo-
dore Silver, Box 64, El Monte, Cal.

Oregon Evergreen Seed Corn and barley
hay for sale. Address R. F. D. 12,
Box 436, Los Angeles, Cal.

DUCKS

Caldwell's White Muscovy Ducks, cash
prize winners P. P. I. E. Exp. Stock
 and eggs. Caldwell Bros., Los Angeles,
 Cal.

Short courses in farming and home
 economics will be given at State Col-
 lege, New Mexico, the week of Janu-
 ary 3-8.

Questions and Answers

THE EDITOR

AND STAFF

Questions to be answered in this de-
 partment should be received at this
 office one week before reply is expected.
 Write plainly on one side of the paper
 and sign full name and address. Un-
 signed communications receive no atten-
 tion.

Dead Wood in Orange Trunk

A year ago I treated a number of
 orange trees for gum disease and have
 noticed this summer among those
 which had received large wounds that
 the wood had died back deep into the
 body of the trunk and many of these
 trees seem to have made only very
 indifferent growth, I presume on ac-
 count of this large amount of dead
 wood. It occurs to me that these
 ought to be subjects for tree surgery
 and would like to ask if you would
 advise the cutting out of all this dead
 wood? By so doing would not the tree
 be benefited by the full flow of sap
 which would not be possible with the
 old wood left on?—Subscriber, Exeter.

After scraping and coating with
 Bordeaux paste it would have been
 wise if the wood could have been
 covered with grafting wax or some
 coating which would have preserved
 and prevented its drying out. As it is
 we believe we would still coat this
 wood with grafting wax unless it has
 begun to decay. In that case all de-
 cayed matter and fungus should be
 removed, the cut should be disinfected
 and only firm, hard wood left.

Help Wanted

Replying to an inquirer who wished
 to learn regarding best grasses for
 pasture a subscriber suggests that the
 best plants for nearly all sections of
 California are bur clover or alfalfa.
 They give vastly more tonnage than
 wild oats or other native grasses and
 cure perfectly on the root.

Incubating Duck Eggs

I have a pair of pure bred
 Pekin ducks. Will you please tell me
 how to keep the eggs in good condi-
 tion until I have enough to set in a
 small incubator? I have one of the
 small, round incubators that holds 75
 eggs. Please tell me at what tempe-
 rature to run incubator, also what to
 feed the young ducklings. — Sub-
 scriber.

Keep the duck eggs, just as you
 would hens' eggs, in a rather cool
 place—about 50 degrees is best—and
 turn every day or two. If you have
 but one laying duck it would be much
 better to set your eggs under a hen
 as soon as you have ten or 12. Duck
 eggs three weeks old might do for

hatching, but I should not want to set
 them older than this, and it is better
 to set them before they are two weeks
 old.

If you use the incubator follow the
 directions that come with it. Some
 breeders think duck eggs should be
 kept at a little lower temperature
 than hens' eggs; others think they do
 as well at a steady temperature of 103
 degrees. Sprinkle the eggs every
 other day after the first week with
 warm water, for duck eggs require
 considerable moisture. They should
 be sprinkled occasionally, though not
 so often when they are under hens un-
 less the weather is damp.

When ducklings are 36 hours old
 begin giving them bread soaked in
 milk and sprinkled with fine sand or
 chick grit. Feed this four times a
 day for three or four days and then
 work them gradually onto a mash of
 four parts bran, one part ground oats,
 one part corn meal, and two parts

green stuff (fine cut lettuce is best).
 After the first week begin adding a
 little beef scrap to the mash and in-
 crease till at the end of the second
 week it reaches one part. Rolled oats
 may be added if desired. Always add
 sand or chick grit to the mash and
 feed moist for ducklings do not do
 well on dry food. For the first ten
 days warm their drinking water a lit-
 tle and give it only with meals.—
 J. A. K.

To Remove Warts

Please let me know how to take
 warts off a cow's teats.—Subscriber,
 Burbank.

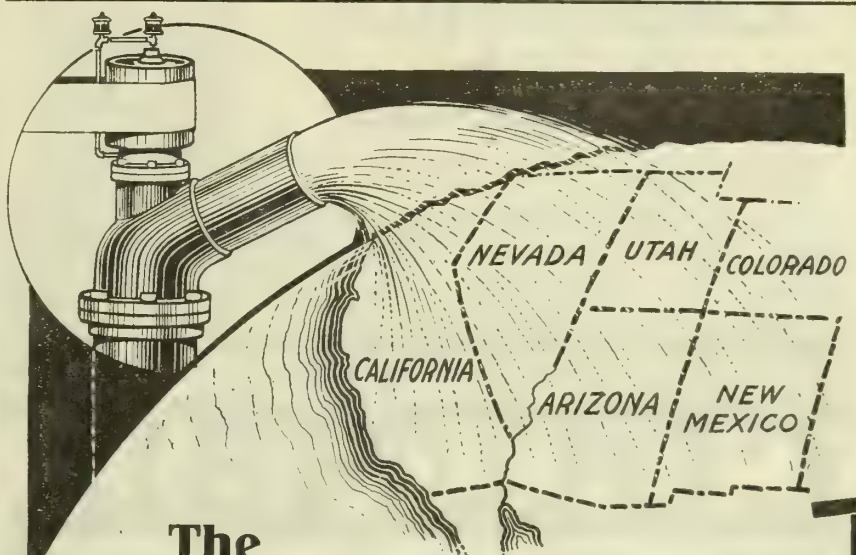
If the warts are attached to the
 teat by a small base clip them off
 very close with scissors and touch
 spot with end of a red-hot iron. If
 warts are large and flat, then it would
 not be advisable to cut them off. After
 each milking apply plenty of olive
 oil over the teats.

Pollenizing Figs

I have several varieties of fig trees,
 the California Smyrna, Black and
 Adriatic. What varieties do I need
 to plant with these in order to effect
 fertilization? The trees are not now
 bearing well.—Subscriber, Ramona.

If by "California Smyrna" our sub-
 scriber means simply the so-called

Continued on Page 631



The Largest Water Developer

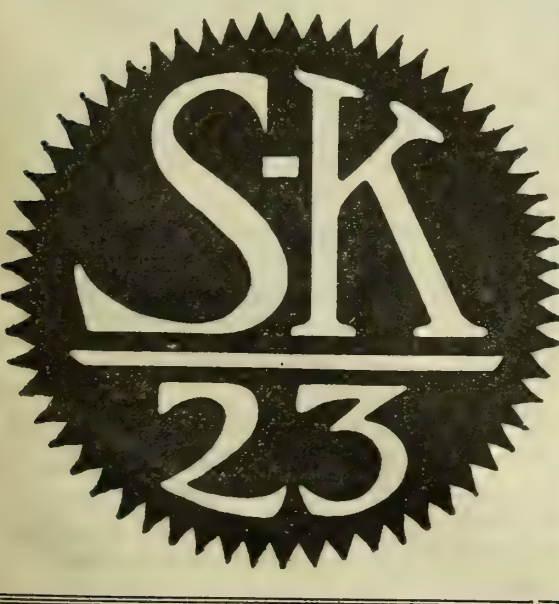
With over 3000 in successful operation, the Layne & Bowler
 Pump is recognized as the largest water developer in the West.

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10-inch Layne & Bowler Pumps— Capacity, 20 to 60 miner's inches.	15-inch Layne & Bowler Pumps— Capacity, 80 to 150 miner's inches.
12-inch Layne & Bowler Pumps— Capacity, 40 to 100 miner's inches.	24-inch Layne & Bowler Pumps— Capacity, 50 to 300 miner's inches.
14-inch Layne & Bowler Pumps— Capacity, 45 to 100 miner's inches.	30-inch Layne & Bowler Pumps— Capacity, 250 to 500 miner's inches.

(A Miner's Inch Equals Nine Gallons Per Minute.)
 These Pumps Can Be Furnished to Lift Water from Any Desired Depth
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**The Spray that Costs 50% Less and is 50%
 More Efficient than Fumigation**

Absolutely destroys all scale, living or unhatched,
 at any time of the year. Kills red spiders at the same
 time. Guaranteed not to burn your Fruits or Trees.

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And Fred took his grocer's advice. He now uses Ghirardelli's Ground Chocolate as a beverage—morning, noon and night. You can make a cup in a minute. For unusual desserts it hasn't an equal.

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Ghirardelli's The Only Ground Chocolate

In ½-lb., 1-lb. and 3-lb. hermetically sealed cans. There's a double economy in buying the 3-lb. can.

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For the entertainment of your friends, for the dancing hour; for a quiet evening of classical music, no other *one* thing gives so much pleasure and entertainment as the Columbia Grafonola.

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Wopworth Bldg., New York

COLUMBIA GRAFONOLA 35
Other Models \$17.50 to \$200. Price \$35



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The Household Department



I
am
the chil-
dren's Christ-
mas tree.
Arrayed with
toys and filagree,
And brilliant gew-
gaws deftly hung,
That catch the eye of
old and young. With
fairies bright and tinted
birds I call forth glad
enraptured words; and
merry eyes will greet the
sight when I am viewed by
candle-light. Beneath my
boughs there lies a scene Of
house and yard and village green;
With mimic railway running through,
As railroads oft are wont to do. I am,
also, a Christmas tree! And this will be
the death of me; For when the Yule-tide
season's past, Upon the ash-heap I'll be
cast. However, while I'm standing here
A host of children I will cheer, And cause
their youthful cheeks to glow, Because
of One Child long ago Who came
this waiting world to bless and
fill our hearts with happiness.
And so, you see, I'm glad
to be
The
lit-
tle
chil-
dren's
Christmas tree.

—American Printer.

O LITTLE TOWN OF BETHLEHEM

O little town of Bethlehem!
How still we see thee lie;
Above thy deep and dreamless sleep
The silent stars go by;
Yet in thy dark streets shineth
The everlasting light;
The hopes and fears of all the years
Are met in thee tonight.

For Christ is born of Mary,
And gathered all above,
While mortals sleep, the angels
keep

Their watch of wondering love.
O morning stars, together
Proclaim the holy birth!
And praises sing to God the King,
And peace to men on earth.

How silently, how silently,
The wondrous gift is given!
So God imparts to human hearts
The blessings of His heaven.
No ear may know His coming,
But in this world of sin,
Where meek souls will receive Him
still,
The dear Christ enters in.

O holy Child of Bethlehem!
Descend to us we pray;
Cast out our sin and enter in,
Be born in us today.
We hear the Christmas angels
The great glad tidings tell;
O come to us, abide with us,
Our Lord Emanuel.
—Phillips Brooks.

YOUNG MR. AND MRS. SANTA CLAUS

"It's just awful to be so poor at
Christmas time, Bobbie! I do wish
we could get some money."

Robert glanced at his sister and
was amazed to see that her dark eyes
were misty with tears. Winifred sel-
dom cried, and she was not given to
complaining.

"Don't feel so bad, Winnie," he
begged. "Father said he would get
you those books you wanted when the
lumber money comes."

"Do you s'pose I am such a selfish
baby as to cry about my own pres-
ents?" snapped Winifred, the fires
of indignation drying the tears. "I
guess I can wait for the old books."
"Well, I can wait for my skates, too,
so you needn't worry about that," de-
clared Robert.

"That's not it, either," said Wini-
fred soberly; "it's Aunt Winnie—I did
so want to send her something nice
for Christmas."

"She's so dear and good—think of
all the things she did for us last sum-
mer when she was here; and I'm
named for her!"

Winifred's voice broke on the last
words, and Robert's face was sober.
Pretty, vivacious Aunt Winnie, who
came, every summer, from the far-
away city to spend a blissful month at

the little farm house in the Catskills,
was the idol of the children's hearts.
No one was so clever, so com-
panionable as Aunt Winnie; no one
had such wonderful clothes, such
charming ways, such stories to tell.

"Well, Aunt Winnie knows that we
are poor," Robert tried to say cheer-
fully. "We can write her a great long
letter and tell her all about it."

"Yes," assented Winifred, bravely,
"we will just have to make the best of
it—but I did want her to have some-
thing from us, right on the very day!
She gets lonely, Bobby, I know she
does. Being a writer lady and get-
ting lots of money for stories isn't
everything!"

"And she loves the country so—if
she only could see the woods now, all
so dark and green against the snow."

Both children, born beauty lovers,
pressed their faces against the win-
dow pane. Soon Winifred spoke:

"Do you remember the stories Aunt
Winnie used to make up for us, when
we were little, about the Forest
Fairy?"

"I was just thinking about that,
too," the boy answered. "I wish we
could send her a piece of the woods."

"Bobbie!" cried Winifred, clutching
his arm with the breathless eager-
ness which characterized her sudden
inspirations, "have you any money at
all?"

"Twenty cents," he answered promptly.

"And I've got thirty—that will pay the express! Oh, Bobbie, you've struck it—you do have the brightest ideas—we will send her a piece of the woods!"

"You know in the city how they put green wreaths in all their windows for Christmas—we'll make six great big wreaths out of the pine and hemlock and those red bittersweet berries we gathered last fall.

"She's told me all about her apartment, heaps of times, and I know it has just six windows. Then we'll make her a pillow filled with pine needles—city folks love them!"

"Winnie, you're a wonder," Bobbie exclaimed delightedly. "Aunt Winnie will like that a hundred times better than anything we could buy. And say, there's all that birch-bark—can't we make something of that, too?"

"Boxes!" declared Winnie, promptly. "There's a big ball of red twine we can lace the sides together with—oh, and we'll fill them with nut meats."

"And we can make some of that maple sugar candy with nuts in it," broke in Robert. "Hooray! Come on, let's begin right now."

A few weeks later a slender, dark-eyed young lady, who looked as if she might be the little Winnifred grown up, sat by one of the windows of a fashionable city apartment, while the hurrying tide of Christmas Eve travel crowded the street below.

But the dark, tired eyes did not notice the passing throng—they glimpsed, instead, a stretch of cool, green woods, thick carpeted with soft, fragrant pine needles, where two children, with adoring, upturned faces, lay listening to her fairy tales. She came back from her dreamland with a start as the bell rang.

"Those blessed kiddies!" she said softly as she went toward the door. "I hope they will have a happy Christmas up there in their beautiful woods. I wish—"

She checked herself abruptly, and opened the door. A burly expressman, bearing a great box, smiled at her in friendly, Christmassy fashion.

"Merry Christmas, ma'am!" he said heartily. "I don't know what's in the box, but it carries the 'smell o' the woods that makes me think of the old home!"

Wonderingly she lifted the cover and the "smell o' the woods" flooded the room. On top lay a card on which was written in round, childish script:

A Box from the Forest Fairy
For Dear Aunt Winnie
Packed by Winifred and Robert.

Aunt Winnie's hands were trembling as she lifted the glossy wreaths whose clinging, spicy fragrance brought a swift rush of happy memories. She knew the slender, silvery trees that had given their bark for the birchen boxes.

Then her thoughts flew to the maple grove, while the glasses of clear, rose-tinted jellies, each enclosed in a dainty roll of birch bark, brought a vision of the garden with its long rows of currant and berry bushes.

And when, last of all, she found the pillow, with its cover cross-stitched by Winifred's clever fingers, she dropped her face against its delicious piney sweetness with a little happy sob.

"Those dear children!" she whispered; "thousands of youngsters could make such a Christmas box, but they are the only two in the whole world who ever would think of it!"—Woman's Magazine.

BURN OIL

SAVE MONEY

Star Oil Gas Burner

For Cook Stove or Furnace. Heat as intense as city gas. Burns cheap engine distillate. No smoke, dirt or odor. Absolutely guaranteed. Agents wanted. Make money selling to friends and neighbors. STAR OIL GAS BURNER CO., Pasadena, Cal.

CHRISTMAS

It comes this year as it has come for centuries, in spite of all the jarring voices that war against its gracious message. Its song of "peace on earth" rang out into a world that had little welcome for it; that denied even the right to live to Him who translated its music into a human life. It was a song of faith. Drowned a thousand times by the discordant shouts of hate and war, it has not faltered in the calm confidence of the truth it was given to proclaim. Again and again as the tumult and the shouting have died away, it has been heard still flooding earth and sky with its holy melody.

It is the song of the world's great optimist. There were ears that heard it even amid the darkness which fell upon that "green hill far away without a city wall." Ears there are that will hear it this year despite the clash of hostile armies and the roar of a thousand cannon. Multitudes there are who will sing it with the same confident faith as in those days of peace when they trusted reason was soon to take the place of war. To doubt the final triumph of the truth sung to the world in the "Glad Tidings" of its first Christmas day, is to sail a sea without a bottom or a shore, chart and compass lost.

We do not hesitate then to send out our Christmas greeting. The things that are seen are temporal. It is in the realm of the unseen that we must seek just now that which abides in the Christmas message and which no night of war, save for a time, can dim with its primeval darkness. Perhaps only such a horror as this could forever sicken the world of war.

If we dare not wish our readers a Merry Christmas, we do wish them all the gladness home and hearts may know when faith and hope and love still live. To all little children who look forward to the day with joy we send our wish for a very "Merry Christmas." Notwithstanding the pain and loss the year has brought, we shall find the Christmas joy just in proportion as we strive to kindle it in other hearts. Never was need greater since time began that each of us live out toward all men everywhere the spirit of the imperishable song, "Peace on Earth, Good Will Toward Men."—Our Dumb Animals.

AS OUR SUN DIPS WEST

The days grow shorter, the nights grow longer,

The headstones thicken along the way,

And life grows sadder, but love grows stronger,

For those who walk with us day by day.

But all true things in the world seem truer,

And the better things of earth seem best,

And friends are dearer as friends are fewer,

And love is all as our sun dips west.

—Selected.

DELICIOUS FUDGE

Here is a delicious fudge recipe and a novel suggestion. Did you ever make a fudge sandwich? It might be a good idea to try out for a Christmas day evening lunch when nobody really can be very hungry.

Two cups granulated sugar, one cup milk, two heaping tablespoons cocoa and a small piece of butter. Cook until it will form a soft ball in cold water. While the fudge is cooking beat the white of one egg stiff. Take the fudge from the stove when done and stir in the egg, beating the mixture until smooth and until it begins to thicken somewhat. Then stir in one-half cup walnut meats and pour into a buttered tin. When cool cut into squares and serve. The white of the egg keeps the fudge from drying out, and it may be kept for some time without becoming hard and brittle.

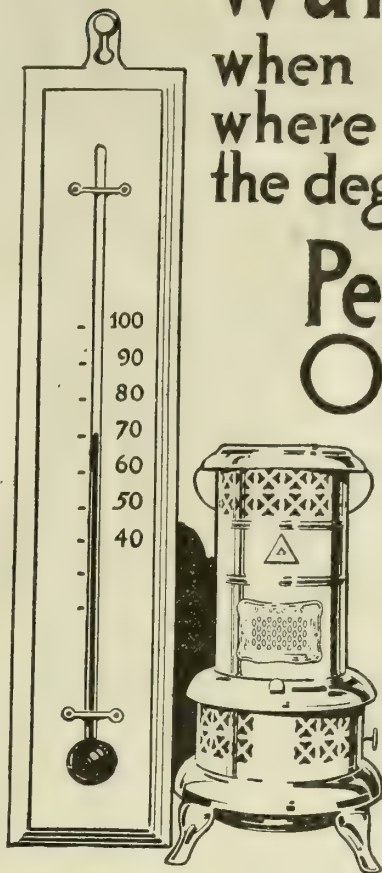
Fudge Sandwiches

The natural desire for sweets may be satisfied in a very good way by giving fudge sandwiches to children from six to 60. Beat fudge until creamy, and while still soft spread between thin slices of buttered bread. If not cooked too hard it may be kept in a bowl covered with a moist cloth for use as filling later.

Warmth!

when } you want it
where }
the degree }

Perfection Oil Heater



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Standard Oil Company

(California)
Los Angeles



THE SYSTEM FOR IRRIGATING ALFALFA

Alfalfa

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Get in on this money crop while the price is soaring to between \$18 and \$20 a ton in most localities.

But do not waste time, money and land and water with antiquated or inefficient irrigation methods. The best is the cheapest in the long run. Secure the advice of our experts—free, and write for some interesting literature invaluable to every rancher.

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"Originators of the Valve System of Irrigating."

WHEAT, ALFALFA

and other grains yield more where a perfect seed bed is prepared. The Western pulverizes, packs and mulches—makes a perfect seed bed at one operation. Saves seed, time and horse power. Is especially adapted for breaking crust on winter wheat or other grain or in orchards after irrigation or packing rains. It forms the hardest crust into a granular mulch without hurting the grain, and prevents evaporation.

Western Pulverizer, Packer and Mulcher 3 Machines in 1 made in 8 sizes, 1 and 3 sections, prices \$20 and up. We want every farmer to have our free catalog before buying a roller or packer. It proves we can save you money and have far the best machine. Contains full description, price direct to you, letters from many farmers proving its advantages over other makes, and much other valuable information. Send for it today.

WESTERN LAND ROLLER CO., Hastings, Nebr.

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P	For Every Purpose	I	2nd	P	Screw Casing
	NEW		Hand		Fittings and Valves
	Threads and Couplings		and		Guaranteed for Pressure
	Hot Asphaltum Dipped		NEW		

E

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When writing advertisers, mention The Cultivator.



San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Dec. 22, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 cents above following quotations:
Creamery Extras25
Firsts26

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies15
Arizona Longhorn17@17½
California Fresh17
Eastern Cheddar20@21
Domestic Swiss23
Eastern Daisy21
Eastern Twins18½
Imported Swiss40
Longhorn19½
Oregon Triplets18@19½
Tillamook19@19½

EGGS AND POULTRY

Prices to trade, 3 cents higher than following quotations:

Fresh Ranch, case counts36
Candied38@40
Northern Fresh Extras, f.o.b. S. F.43
Prices to producers:
Hens, lb.15@17
Roosters, old9
Broilers, lb.25
Fryers18
Roasters, lb.14
Turkeys16@19
Ducks15
Geese12
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

Hogs, 175 to 200 lbs., per cwt.6.25
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug.75
Rurals1.30@1.35
Idaho Russets1.60@1.65
Lompoc1.85
Northern Burbanks1.55@1.70
Salinas1.85@1.90
Seed Potatoes:
Early Rose2.15@2.25
White Rose1.75@1.80
American Wonder2.00@2.10

ONIONS

Wholesale selling price:
White Globe, lug.1.00
Brown Globe, cwt.1.75
Oregon Globes, cwt.2.00
Garlic15
Sets—
White, lb.12
Yellow, lb.9

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.25@1.35
Beets, doz.35
Beans—
Wax10
Limas7@8
Green10
Brussels Sprouts, lb.9@10
Cabbage, sack1.15
Northern, lb.2
Carrots, doz.30
Cauliflower, doz.40@50
Celery, doz.75
Chicory, doz.40
Chives, doz.1.00
Cucumbers, Hothouse, doz.50@1.75
Egg Plant, lb.7@8
Escarole, doz.90
Horseradish, lb.10@11
Leeks, doz.40
Lettuce, doz.35
Mint, doz.40
Onions, Green, doz.20
Oyster Plant, doz.40
Parsnips, doz.35
Peas, Telephone8½@9
Peppers—
Bells6@7
Chili, lb.6@7
Pimientos, lb.6
Rhubarb1.10
Spinach, doz.20
Squash—
Crookneck, lug.63
Hubbard, lb.1¼@1½
Small Cream45
Summer, lug.1.00
Tomatoes, lug.90@1.00

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower1.10@1.25
Jonathans1.70@1.90
King David1.50@1.65
Pears, White1.00@1.25
Pears, Red1.10@1.15
Yellow Newtown Pippins1.10@1.15
Bananas, lb.4
Berries—
Strawberries, basket10@15
Blackberries, basket12

Raspberries, basket13@15
Casabaas, half crates4.00
Cranberries, bbl.11.75@12.00
Figs—
Bik. box1.10@1.25
White85@90
Grapes—
Malagas, lug.1.65
Cornichon, lug.1.75
Red Emperor, lug.1.75
Pears, Bartlett, packed box3.00
Winter Nelis, lug.1.50
Persimmons, lb.6@7
Pineapples, lb.6@7
Pomegranates, half orange box1.75

CITRUS FRUIT

Wholesale selling price:
Lemons2.00@2.50
Juice Lemons1.25
Grapefruit, Seedless4.50@5.00
New2.75
Limes, basket1.00
New Navels2.50
Tangerines, half box1.50
Valencias4.00@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes 8½@9½
Apricots10½@11½
Peaches6@7½
Pears11
Prunes, fancy pack5½@13

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	14.00
No. 2	12.00	10.60
Buds	20.00	17.50
Jumbos	18.50	16.60
See almond quotations by Association under San Francisco.		
Peanuts—		
California, Raw	5@6	
Japan	5½@6	
Eastern	6½@7	
Chinese	5	
Pecans		17

HONEY

Wholesale selling price:
Comb, Fancy Water White18
Extracted Water White7½
White7
Light Amber6
Beeswax25@26

BEANS

Wholesale selling price:
Limas5.40@5.50
Lady Washington7.00
Rinks5.50
Black Eyes4.00
Lentils17.00@20.00
Manchurian Reds4.00@4.25
Small White6.75
Garbanzos5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley14.00@17.00
Wheat Hay12.00@16.00
Tame Oat16.00@20.00
Alfalfa12.50@15.00
Volunteer8.00@10.00
Straw6.00@7.00

GRAIN

Wholesale selling prices f. o. b. Los Angeles:
Corn, Yellow2.00
Corn, White2.10
Wheat2.15
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.50
Barley Seed1.65
Barley, Hulled1.95
Kaffir1.75
Milo1.60
Rye2.00
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los Angeles:
Alfalfa Meal1.15
Brn. Heavy1.55
Shorts1.85
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.05@3.15
Beef Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.05
Cracked Wheat, cwt.2.25
Cotton Seed Meal1.90
Bone, Green1.85@1.95

Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.60
Rolled Oats1.80
O. & W. Middlings1.85
Feed Meal2.10
Scratch Feed2.10@2.20
Oyster Shell1.15@1.25
Scratch Gritlets2.25@2.40
Best Chick Feed2.80@2.90
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Dec. 21, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given.

BUTTER

Prices to trade, 4 cents above following quotations:

Fresh Extras26
Prime Firsts25
Firsts24

CHEESE

Wholesaler to retailer:
Young Americas16½
California Flats14½@17
New York Cheddar21
California Cheddar17½
Oregon Twins17
Oregon Young America, fancy16

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Price to producer:
Fresh Extras41
Select Pullets31
Hens, lb.14@17
Fryers19@21
Broilers23@27
Roosters—
Young18@19
Old10@11
Squabs2.50@3.00
Turkeys—
Live Young20@21
Live Old19@20
Dressed, Young22@26
Dressed, Old20@23
Ducks12@13
Geese, pair2.50@3.00
Belgian Hares—
Live8@9
Dressed10@11½

LIVE STOCK

San Francisco prices, gross weight:
Steers4@6¼
Cows and Heifers3½@6
Calves, lb., live wt.6@8¼
Hogs4@6½
Wethers6@8¼
Ewes5@8¼
Milk Lambs, lb.7¼@8

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.60@1.85
Delta Burbanks, cwt.1.00@1.45
Sweets1.35@1.50
Oregon1.25@1.60
Idaho Rural1.20@1.30
Idaho Russets1.25@1.60

ONIONS

Wholesale selling price:
Onions, cwt.75@1.00
Garlic, lb.10@12½

VEGETABLES

Wholesale selling price:
Artichokes, doz.50@1.00
Beans—
String, lb.3@10
Limas, lb.5@7
Wax, lb.4@7
Brussels Sprouts, lb.3@4
Celery, crate2.25@2.50
Cucumbers, doz., hothouse75@1.00
Egg Plant, Southern, lb.3@5
Lettuce, crate75@1.75
Peas, Southern5@10

WEATHER CONDITIONS

For the Week Ending December 18, 1915

Report from the various California Stations of the United States Weather Bureau by George H. Wilson, director, San Francisco.

—Rainfall Data— Temperature Data

	Past Week	Seasonal to Date	Normal to Date	Maxi-mum	Mini-mum
Fureka	1.09	11.59	13.76	56	36
Red Bluff	2.28	9.40	8.08	54	36
Sacramento	2.48	5.16	5.43	54	40
San Francisco	2.89	7.31	6.15	58	46
San Jose	1.51	4.56	4.59	58	36
Fresno	.44	3.00	2.79	64	34
Independence	.08	.33	2.70	46	—
San Luis Obispo	1.26	3.86	4.66	60	36
Los Angeles	.48	3.18	3.62	62	42
San Diego	.98	2.20	2.18	64	42

Peppers—
Chili, lb.1½@2½
Bell, box40@55
Rhubarb, box1.00@1.50
Squash—
Summer, lug40@60
Cream50@65
Hubbard, sack65@75
Tomatoes, Southern, crate65@1.00

FRESH FRUIT

Wholesale selling price:
Apples—
Newtown Pippins75@1.25
Pears, White65@85
Bananas, Hawaiian, bunch1.00@1.75
Cranberries, Eastern, bl.11.50@12.50
Oregon, box3.50@3.75
Persimmons, box75@1.25
Pineapples, doz.1.25@2.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit—Seedlings—New2.00@3.00
Lemons1.50@3.75
Lemonettes1.50@1.75
Limes, Mex., cs.5.50@6.50
Navels, new1.50@2.75
Tangerines, box1.50@2.00
Valencias2.25@4.50

DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis in carload lots, 1915 crop: Santa Claras, 30-40s, 7c; 40-50s, 5½c; other sizes, 5½c. All outside sections ¼c lower.
Other Fruits. Stand-Choice Extra
50-lb. boxes ard. Choice Choice Fancy
Peaches ... 4½c 5½c 5½c 6 c
Pears ... 6½c 8 c 8½c 10½c
Apples ... 8 c 8½c 9 c
Apricots ... 9 c 10½c 10½c 11½c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5½c; 4-crown, 6c.
The above prices are for November, and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.

Nonpareil15
IXL13½
Ne Plus13
Drake's11
Languedocs11
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6

BEANS

Wholesale selling price:
Limas4.90@5.00
Pink4.70@4.75
Black Eyes3.75@4.00
Cranberry, California5.50@5.60
Small White6.00@6.10
Garbanzos4.25@4.50
Large White6.20@6.30
Bayou5.50@5.60
Red Mexican5.15@5.30
Red Kidney8.00@8.25
Horse Beans2.00@3.50

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White7@8
Light Amber4@5½
Dark Amber2
Beeswax25@28

RICE

Price net to growers at shipping points.
California Waterburbine, lb.2@2.15c

HOPS

1915
Wholesale selling price:
Sacramento Valley9@10½
Sonoma-Mendocino10½@12
Oregon-Washington10@12

HAY

Under date of December 18, Scott, Magner & Miller say:
Receipts of hay for the past week were 1561 tons, the week before 2423 tons, the preceding week 2861 tons. The market continues about the same as heretofore. No change to note with the exception of alfalfa which is extremely scarce with demand good. Fancy wheat and red oat when obtainable bring top quotations. Arrivals of medium grades continue to be in the majority and are moved from the tracks without much difficulty at previous quotations. Interior trade continues good with Southern California improving. There is no change to note in straw.

We quote the average wholesale prices for hay in carload lots on today's market as follows:
Fancy Wheat Hay (16 bales)17.00@18.00
No. 1 Wheat or Wheat and Oat12.00@15.00
No. 2 Wheat or Wheat and Oat10.00@11.50
Choice Tame Oat15.00@16.50

Other Tame Oat	10.00@14.50
Wild Oat	8.00@11.50
Alfalfa	10.00@14.00
Stock Hay	6.00@8.00
No. 1 Barley Straw	25@49

GRAIN

Alfalfa Seed	17½@18½
Wheat, Cal. Club	1.60@1.70
Blue Stem	1.80@1.82½
Barley Feed	1.25@1.27½
Shipping and Brewing	1.30@1.32½
Corn, Eastern Yellow, old	1.67@1.68
New	1.55@1.62½
Corn, Egyptian White	1.47½@1.52½
Oats, Red, Feed	1.27½@1.35
Oats, Red, Seed	1.40@1.50
Oats, White, Feed	1.37½@1.40
Oats, Black, Feed	1.50@2.00
Millet	2½@3
Rape	2½@3
Flaxseed	5½@6
Rye	1.55@1.57½

FEED STUFF

Wholesale prices	
Alfalfa Meal, car lots	16.50@17.50
Brass, ton	25.00@26.00
Feed Cornmeal	38.50@39.00
Cracked Corn	38.50@39.00
Rolls Barley, ton	27.50@28.50
Middlings	31.00@33.00
Shorts	26.00@27.00
Oilcake Meal	37.50@39.00
Cocoanut Oilcake Meal	23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 22, 1915.

The quality of the fruit has created an exceptional demand for California oranges. On the other hand, there has been a disposition on the part of some shippers to force an immense quantity of fruit into the market for the holiday trade. This in some sections has rather weakened the market though the great majority of shippers are holding for firm prices.

The lemon market is exceptionally fine. It is making the best showing that it has for years at this period.

Shipments

Shipments of oranges from Southern California to date since November 1, 1915, 950 cars, lemons 673, total 1623; to same date last year, oranges 787, lemons 440, total 1227. From Central California this season, oranges 2306, lemons 53, total 2359; last year same date, oranges 2720, lemons 81, total 2801. From Northern California this season, oranges 478, last year same date, oranges 393.

NEW YORK, Dec. 20.—Thirty-six cars lemons, one Arizona lemons, and thirteen cars lemons sold. Market strong and active on both oranges and lemons. Arizona higher on fancy, lower on choice. Weather fair.

NAVELS—	Avg.
Mars, Amer. Ft. Dis.	\$2.60
Big Tree, C.C. Ex.	3.45
Silver Lake, C.C. Ex.	3.20
ARIZONA NAVELS—	Avg.
Tonto	\$2.55
ARIZONA NAVELS—HALVES	Avg.
Desert	\$2.60
Cactus	1.50
Tonto	1.15
CALIFORNIA LEMONS—	Avg.
Excellent	\$4.00
Sunside	3.85
Quail	3.85
Coyote	3.50
Silver Lemon	3.95
Setter	3.90
Prairie Chicken	3.60
Trail	4.00

BOSTON, Dec. 20.—Fifteen cars sold. Market is unchanged on both oranges and lemons.

NAVEL—S	Avg.
Paramount Blue	\$3.15
Paramount Blue	2.95

Paramount Blue	2.60
Paramount Red	2.50
LEMONS—	Avg.
Mars, Amer. Ft. Dis.	\$3.65
Jupiter	3.05
Sespe, F.C. Ex.	3.45
Alamo	2.85
Pet. S.D. Ex.	3.25
Greyhound	2.70
NAVELS—HALVES—	Avg.
Lindsay	\$1.30

PITTSBURGH, Dec. 20.—Fourteen cars sold. Market is lower on navels, steady on lemons.

NAVELS—	Avg.
Dulce, Harper Ft. Co.	1.90
Cleghorn, Growers Ft. Co.	4.00
LEMONS—	Avg.
Sespe, F.C. Ex.	\$3.20
Log Cabin, L.F. Co.	3.55
Hillside Gem	3.25

ST. LOUIS, Dec. 20.—Eight cars sold. Market easier on navels, steady on lemons.

NAVELS—	Avg.
Tustin Gem, Tustin P. Co.	\$2.70
Paramount Red	1.85
LEMONS—	Avg.
California	3.00
Leader	2.70
Minerva	2.40
LEMONETTES—	Avg.
Leader	\$1.15

CINCINNATI, Dec. 20.—Four cars sold. Market weak on oranges; lower on lemons.

NAVELS—	Avg.
Porterville's Best, T.C. Ex.	\$2.35
LEMONS—	Avg.
Cycle, F.C. Ex.	\$2.35
Oriole	2.70
Bridal Veil, V.C. Ex.	3.55

CLEVELAND, Dec. 20.—Eight cars sold. Market strong on both oranges and lemons.

NAVELS—	Avg.
Earliest, C.C. Ex.	3.20
LEMONS—	Avg.
Moose, O.K. Ex.	\$3.85
Protection, C.C. Ex.	4.40

PHILADELPHIA, Dec. 20.—Five cars sold. Market firm at prevailing prices on navels, strong on lemons.

NAVELS—	Avg.
Exeter, C.C. Ex.	\$2.70
LEMONS—	Avg.
Dan Patch, S.B. Ex.	\$3.55
Pony	3.40
Glenwood	3.90

BOSTON, Dec. 17.—(Delayed sale of Friday.) Seven cars sold.

NAVELS—	Avg.
Paramount Blue	\$3.05
Green	2.65
Kaweah Chief	3.40
LEMONS—	Avg.
Gold Buckle	\$3.80
Belt	3.40
Carro Amano	2.80

CHICAGO, Dec. 20.—California navel oranges are having good sale. They are much better color than Florida offerings, and bring a premium for that reason: Boxes, \$2.50@3.25; Florida, \$1.50@2.25. Satsumas, half boxes, \$1.75@2.00; Tangerines, straps, two boxes, \$2.00@3.25. Pears, 50-lb. boxes, Winter Nelis, \$2.75@3.00. Grapes, 50-lb. drums, Empress, \$3.75@4.25; Catawbas, baskets, 8@12c. Lemons, boxes, California fancy, 300 count, \$4.00@4.25; choice, 360 count, \$3.50@3.75. Persimmons, cases, 4 baskets, \$1.25. Casabas, flat cases, 6 to 8 melons, California pineapple variety, \$1.75@2.25. Strawberries, California, 15 @20c per pint. Grapefruit, boxes, \$1.75@3.00. Kumquats, per quart, 12½@15c. Apples, Western, boxes, \$1.80@2.75.

ORANGE TREES

The Wallace Nurseries of Los Angeles have orange trees to sell and call particular attention in this week's issue to their special offer. One feature is that real estate or any other reasonable swap will be considered in exchange for trees. It now appears that it will be a big citrus year and the Wallace people are prepared to meet a heavy demand for citrus trees. They have not only Navel and Valencia oranges but lemons, grapefruit and all varieties of citrus. More particulars may be seen in their advertisement in this issue.

COLD WEATHER DISEASES

Continued from Page 625

one internal remedy is recommended. This is calcium sulphide, a well known remedy for blood diseases, which may be had either in powder or tablets from almost any druggist. The dose is one grain per day for each five-pound bird, and is best given in a small quantity of wet mash. Give the dose daily for a week, then omit for a few days and repeat if necessary. Dr. N. W. Sanborn, who continually prescribes this drug, claims that if it is given to birds that have been exposed, the disease will be lightened or averted altogether.

But the most important part of the treatment of chicken pox is the cleaning and disinfecting of the houses, yards, roosts and utensils that have been touched by the sick birds. This is absolutely imperative for the disease is so infectious that the germs remain year after year and infect each new flock of pullets. Walls should be washed with the garden hose and painted with kerosene and crude carbolic acid or whitewashed with a whitewash containing carbolic acid. Roosts should be washed with boiling water and painted with the same or some other strong disinfectant. Troughs and drinking vessels should be scrubbed and the surface soil of the yards removed. It is better to leave houses that have been infected empty for several months after cleaning. Only by the most extreme care can all the germs be removed, and if they are not removed there will be more infection.

QUESTIONS AND ANSWERS

Continued from Page 627

Smyrna, which is different from the Smyrna fig of commerce, none of these trees need other varieties for pollenization. Certainly the Black and Adriatic do not and we think the subscriber should look further for the cause of their not bearing. If the Smyrna referred to is the true commercial type of Smyrna then the caprifig must be secured in order to afford pollen and a breeding place for the little fig wasp or blastophaga. There are usually two varieties of this tree required, one for holding over the winter crop which keeps the wasp alive until springtime, then other varieties which bear early and afford the breeding ground. Or the caprifigs may be purchased at the proper season from those who have large orchards.

Liver Disease in Rabbits

My Flemish Giant and Belgian rabbits, fed alfalfa hay with a small handful of rolled barley appear to be well, but upon killing and dressing them I discover that the livers are spotted. What is the trouble and what treatment should be given?—Subscriber, Yorba Linda.

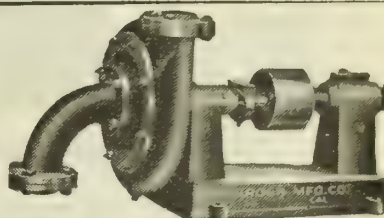
Probably the feed is rather heavy. The addition of green feed and the reduction of grain will perhaps be beneficial. We note in "Practical Rabbit Keeping" by Townsend: "Rabbits suffering from this complaint have difficulty in breathing, which is heavy and quite audible. They, however, eat well, and, with the exception of a dull, listless appearance, seem in good health. With correct feed and feeding and green food in season, particularly dandelion, rabbits rarely suffer from liver complaints. Should the liver become diseased or chronic inflammation set in, the patient had better be destroyed and thus put out of its misery, as the chances of permanent cure are exceedingly remote."

Caked Udder

A subscriber, Mr. L. N. Snyder, sends us the following regarding his experience with caked udder:

"Here is a remedy for caked udder in cow when 'fresh.' Equal quantities of beeswax and mutton or beef tallow or lard—tallow is best. Melt together and apply warm. (It can be kept warm by setting in vessel of hot water). When calf is three days' old I commence the application, if the cow has been giving milk before. With a heifer commence first day. Apply once a day. It always does the work for me in three days. It is a theory of mine that with and after the third calf it is best to let the cake stay in the udder three or four days. Am I right?"

"Land Clearing"



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*Facts
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Bulletin 174*

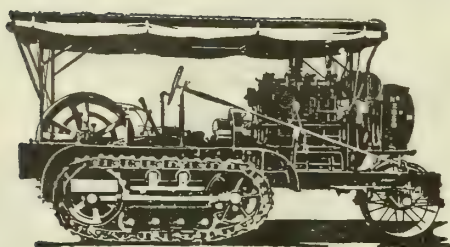
Little Stories of Success No. 11

"Bankers Opinions regarding the tractor" is the title of table No. 2 in Bulletin 174 of the U. S. Department of Agriculture. The first question asked the bankers was: "Has traction farming had a favorable or unfavorable effect upon the farming industry in your vicinity?"

In California, where three-fourths of all the tractors in the State are Caterpillars, 95% of the replies were favorable. Conservative bankers almost unanimously voted Caterpillar farming a success!

Wouldn't a Caterpillar be a good investment for you?

We have other facts and figures regarding the comparative costs of animal power and Caterpillar power for farming. A postal will bring them.



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Jackson Deep Well Turbine Pumps give continuous and efficient service. They do not get out of order as they have no valves or plunger rods. Very little care or attention needed as they are oiled from the surface. Are much lower in cost than other types of deep well pumps when the expense of dug pits, cribbing and timbering is reckoned. They raise water from the very bottom of the well, thus eliminating heavy vacuums and delivering all the water the well yields. They develop slow wells and increase their flow.

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Strong, durable construction and
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Orchard and Universal Cultivator the most
economical cultivator you can use in orchard,
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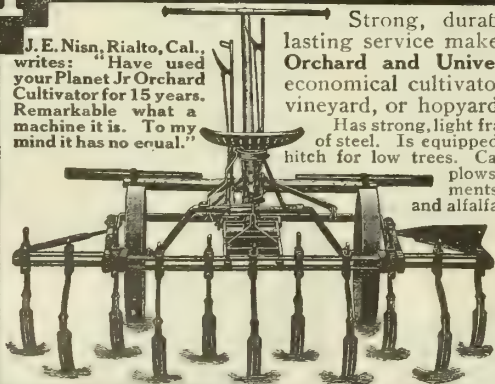
Has strong, light frame, low wheels, and tongue, all
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hitch for low trees. Carries teeth, sweeps, furrowers,
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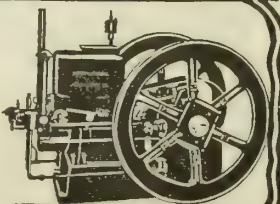
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a soil is lacking in them or has plenty of them.

5. Whether disclosure of Carbonates is Alkali or Lime.

6. Whether a soil is lacking in Humus. It will show you whether a soil contains 1 per cent or more, ½ per cent, or none.

7. Whether a soil is in need of a green manure crop.

8. It will demonstrate the probability as to whether a soil will respond to applications of chemical fertilizers or not.

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Get the most out of your land, labor and seed. Make your acreage yield more. Even a 10 per cent increase will make a big difference in your profits—and that is easily possible by careful planting. The one best help is the one best drill.

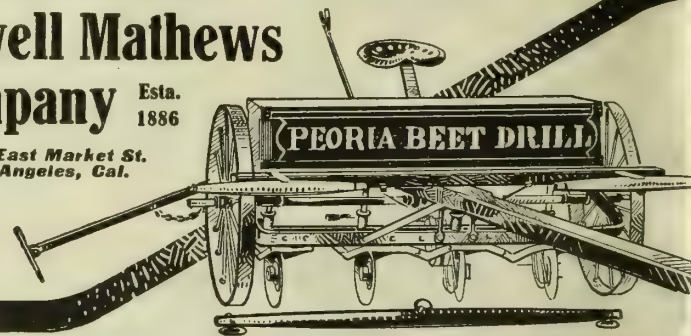
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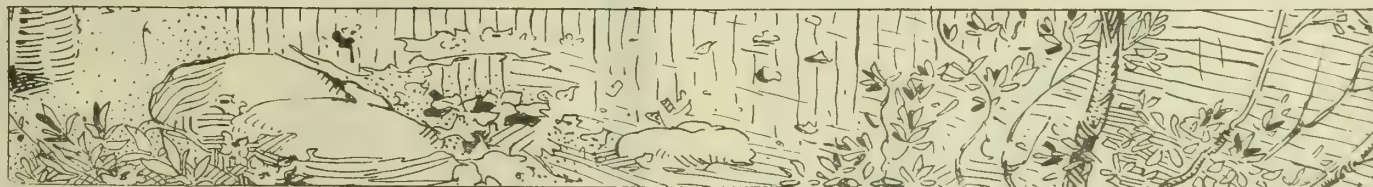
Rural Californian combined with California Cultivator

An Illustrated Weekly Magazine, Devoted to the Rural Home and Ranch

LOS ANGELES

December 30, 1915

SAN FRANCISCO



Corn-Filled Silos. See Page 647.

Books

This list is prepared with the purpose of enabling our Cultivator readers to supply themselves with standard books at lowest possible prices. We call especial attention to a few of the new publications. "Citrus Fruits" by Professor Coit, of the University of California, covers all phases of the Citrus Industry under California conditions—the kind of a book we have had many calls for but never before been able to supply. "Productive Feeding of Farm Animals" by Woll, will command special attention. "Poultry for Profit" (The Cultivator Poultry Book) by Koethen, another California book, is new and excellent, telling what to do and what not to do with poultry in California; a sure guide to poultry success. The new Standard Cyclopedia of Horticulture, by Bailey, is not equalled by anything of the kind which has ever been published at any time in any language. Special terms of payment and discounts are offered by the publishers through us on this Cyclopedia. Write us about it.

Free for the following number of new Subscribers.

Book Alone.	With Cultivator.	
American Grape Growing, by Hussman.....	\$ 1.50	\$ 2.25
American Peach Orchard, by Waugh.....	1.00	1.85
Arid Agriculture, by Buffum.....	1.50	2.35
Book of Alfalfa, by Coburn.....	2.00	2.75
California Soils, by Prof. Gilbert E. Bailey.....	1.50	2.20
Cement Worker's Handbook.....	.50	1.30
Citrus Fruits, by Coit (new).....	2.00	2.75
Cooperation in Agriculture, by Powell.....	1.50	2.40
Domestic Water Supplies on the Farm, Fuller.....	1.50	2.30
Date Growing, by Popenoe.....	2.16	2.85
Feeds and Feeding, by Henry.....	2.25	3.00
Farm and Garden Rule Book, by Bailey.....	2.17	2.90
Farm Animals, Hunt and Burkett.....	1.50	2.35
Farm Sewage, by Santee.....	.50	1.40
Field Manual for Sugar Beet Growers, Adams.....	1.00	1.85
Fruit Growing in Arid Regions, by Paddock.....	1.50	2.40
Farm Manures, by Thorne.....	1.50	2.25
Farm Friends and Farm Foes.....	.90	1.85
Farmers of Forty Centuries, by King.....	2.15	2.95
Fertilizers, by Vorhees.....	1.25	2.15
Fertilizers and Crops, by Van Slyke.....	2.50	3.35
Fertilizers, Source, Purchase and Use, by Smith.....	1.00	1.90
Fungous Diseases of Plants, by Duggar.....	2.40	3.25
Garden Helps, by Hall.....	.75	1.65
Gasoline Engine on the Farm, by Putnam.....	2.00	2.60
Gardening in California, Landscape and Flower by McLaren.....	3.75	4.50
Garden Book of California (Ornamental), by Angier.....	2.00	2.85
How to Keep Farm Accounts.....	1.00	1.75
Hand Book for Farmers and Dairymen, by Woll.....	1.50	2.30
Harpers Gasoline Engine Book.....	1.00	1.80
Irrigation and Drainage, by King.....	1.50	2.40
Intensive Farming.....	.75	1.60
Insecticides, Fungicides and Weed-killers by Bourcart.....	4.50	5.00
Insect Pests of Farm, Garden and Orchard, by Sanderson.....	3.00	3.85
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Vol. XLV No. 27

LOS ANGELES: THURSDAY, December 30, 1915

One Dollar Yearly

The Farmers Union in Santa Clara Valley

Dr. Leroy Anderson Writes for Cultivator Readers of a Live Organization in Prune Land and Gives a Bit of History of the Central Organization

"Away down here on Llagas Creek,
Hail Farmers' Union Hail!
We welcome you to our picnic,
Hail Farmers' Union Hail!
We'll give you all you want to eat,
Hail Farmers' Union Hail!
For we've got the cooks that can't be beat,
Hail Farmers' Union Hail!

"We know you'll find it awful nice,
Hail Farmers' Union Hail!
To spend a day in Paradise,
Hail Farmers' Union Hail!
We know you all would like to stay,
Hail Farmers' Union Hail!
And if you'll be good, you may some day,
Hail Farmers' Union Hail!

Thus sang the popular Morganhill quartette at the annual picnic of the Santa Clara County Farmers' Union. The place was in Paradise Valley to the northwest of Morganhill, a beautiful little valley traversed by Llagas

Educationally and socially the work of the Union is similar to any other farmers' organization, the grange or a local farmers' club. The locals meet usually twice a month. Discussions are held on any topic of interest to the farmer, either locally or in the wider spheres of state and nation. Some locals either precede the meeting by a supper or follow with light refreshments, either of which helps to increase attendance and adds greatly to the sociability. The county Union is officially composed of delegates elected by each local and meets quarterly. This is largely a business affair where questions of policy and legislation are discussed. The state Union meets annually for a two-day session for the transaction of business relating to the state at large. Officially this convention is made up of delegates from county and local Unions. The social feature of the annual meeting is a

the carload from Salinas Valley and flour by the carload from the Farmers' Union mills in Oregon or Washington. Hence there is a direct saving to the members on all supplies which they secure through their Union. The Morganhill local is the largest in the state, having over 300 members.

In the spring of 1914 there was organized the Farmers' Union Buying Association of Santa Clara County with headquarters at Campbell. This was organized without capital and buys only upon orders from its members. Hence the business is small in comparison to that of Morganhill, and moreover, while it bears the name of a county association, its business is in reality quite confined to the locality immediately surrounding Campbell. The nucleus is there for a good business and a saving business for union members.

Cooperative Selling

When you talk to a Santa Clara farmer about selling produce, he thinks prunes and begins to talk prunes. Hence to be most useful to the Santa Clara man the Farmers' Union must be able to sell prunes. In order legally to negotiate a selling business there was organized by members of the Farmers' Union "The California Farmers' Union, Incorporated", according to the laws of the state governing such cooperative enterprises. The work of this organization is distinct from that of the Farmers' Educational and Cooperative Union. Becoming a member of the latter does not necessarily mean that one becomes a member of the incorporated body. But one must first be a member of the Farmers' Educational and Cooperative Union before he can purchase stock in and sell products through the Farmers' Union, Incorporated, which act constitutes membership therein.

The Farmers' Union, Incorporated came into existence at Fresno in 1909, and the business office was located there until 1913 when it was moved

the Eastern states and Canada. The 1915 crop of dried prunes it has to sell amounts to 2500 to 3000 tons from Santa Clara Valley. These prunes come from all parts of the valley and are packed in four different packing houses, three of which are owned by local incorporated Farmers' Unions.

A packing house was built by the Morganhill Union in 1911 and up to the present time about \$11,000 has been invested in the building and the business attached thereto. This year the packing house is handling between 1000 and 1500 tons of dried prunes.

The Campbell Farmers' Union, Incorporated began business in a rented packing house in 1909 and in 1912 built one of its own and equipped it at a total cost of over \$11,000. The prune pack at this house this year is in the neighborhood of 500 tons.

Encouraged by the success in other localities the Gilroy Union erected a packing house this year, and at the time of its dedication, August 13, there were 800 tons of prunes contracted for. The equipment was not yet all installed and the expense up to date for site and building had been \$8000.

Members of the Farmers' Union, Incorporated living in the neighborhood of Saratoga deliver their prunes to the private packing house of a member located at that place and he packs them.

Prunes

The acreage of this fruit in Santa Clara County is said by those who are good at figures to be 55,000 or thereabouts, and I understand that to be acreage of bearing trees. The normal crop of dried prunes is fixed by those same good calculators at 120,000,000 pounds or 60,000 tons. For the years of 1913 and 1914 the state horticultural commissioner has calculated that this county produced 62 per cent of all the dried prunes in California. If this be true it suggests the possibility that if all the growers in this



Farmers' Union Packing House, Morgan Hill

Creek and noted for its rich soil and never failing crop of prunes. Morganhill Farmers' Union picnics there every year, and so attractive is the place and so cordial the local people that the county union is readily drawn there. The local press said there were 2000 present but that might be discounted a little and still leave a big crowd. A grove of young eucalyptus had been set with tables enough for everybody to spread their lunch and to sit down in shade and comfort for the day's chief enjoyment. Coffee and lemonade was dispensed in abundance by the Morganhill Union.

Historical

The full and complete name of this organization is the Farmers' Educational and Cooperative Union of America. Its various divisions are local, county, state and national, and it began existence as a local Union formed at Point, Texas, August 28, 1902. The first local in California was organized in the spring of 1909. Santa Clara County was in early on the organization and now has 13 locals with a membership of about 108.

big feed at noon of each day. Strange how farmers do like to eat!

The Farmers' Union is a secret organization, has a ritual of initiation and holds its meetings in secret session. Occasionally open meetings are held to which the entire community is invited. The expense of membership is for women nothing, for men an initiation fee of two dollars and dues 75 cents a quarter, or two dollars and 25 cents per year. Half of the initiation fee and about half of the dues go to the support of county, state and national organizations.

Cooperative Buying

The most striking illustration in Santa Clara Valley of successful cooperation in doing business for its members is with the Morganhill Farmers' Union, Incorporated. The organization for business purposes was effected in 1911 and a packing house built. As both a producer and a consumer the farmer needs cooperation at both ends of his business, a place to pool his products for sale and a place to purchase supplies by wholesale. Just at present we will mention the buying end. The Morganhill Union buys for its members grain, mill feeds, fertilizers, flour, potatoes and many other commodities to the amount of about \$3000 per month. Where possible purchases are made directly from producers or manufacturers, as for example, potatoes by



Farmers' Union Packing House, Gilroy

to San Francisco. The manager, with the board of directors, does the selling of such dried fruit as is contracted for from the members. During the six years of existence it has sold 21,000 tons of dried fruit. The Union has had a market in European countries for about half its holdings while the remaining half has gone to

comparatively small region should pool their entire crop they could control prune prices for the state. If 1915 be a year of a normal crop, or 60,000 tons, and the Farmers' Union handles 3000 tons, that is only five per cent of the total, manifestly not enough to cut any figure in price fix-
Continued on Page 640

Bean Giant Power Sprayer

The Power Sprayer for Large Orchards

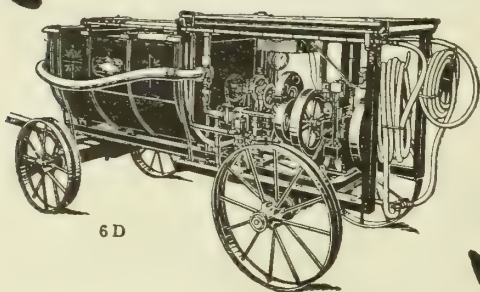
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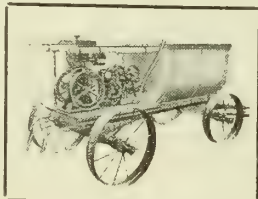
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LIFE IN THE SOIL (CONCLUDED)

By Howard S. Reed

It has long been known that there are specific varieties of bacteria for certain legumes and that it is useless to attempt inoculation unless one has the proper variety of bacteria. Bulletin 184 of the Kentucky experiment station, recently published, divides the bacteria into six classes, based upon careful studies made at that institution. These classes are as follows:

Bacteria of melilotus and alfalfa. The same organism is capable of infecting all these plants but will not infect clover, vetch, peas, soy beans, cow peas or other beans.

Bacteria of vetch and garden peas. The same organism will infect both of these plants but not clover, alfalfa, cow peas, soy beans or common beans.

Bacteria of cow peas. This organism will not infect any other cultivated legume although it is found on a number of native legumes.

Bacteria of soy beans. The soy bean is a native of Asia and was at first unsuccessfully cultivated in this country owing to the lack of suitable nodule forming bacteria. After introducing a quantity of earth and pods from Asia as inoculating material the soy bean was grown successfully, but when it is introduced to a new district it is usually necessary to use suitable inoculating material because the soil is lacking in these organisms. So far as is known the soy bean organism does not grow on other legumes.

Bacteria of white beans. So far as known this organism does not grow on other legumes.

Bacteria of the clovers. These will inoculate all clovers of the genus trifolium but they will not inoculate alfalfa, sweet clover, bitter clover, peas or beans.

The necessity for the proper race of bacteria brings up the question of inoculation. As previously pointed out it is necessary to inoculate if the suitable bacteria are not found in the field soil in which the seed is to be planted. Many hundreds of experiments have been made showing the benefits derived from this kind of inoculation. The yield of plant or seed may be multiplied many fold by attention to this necessity. Inoculation is more necessary on newly cleared land than in the older farming districts where the soils are usually well supplied with the different varieties of bacteria. However in the dryer parts of the country where dust storms are of frequent occurrence the bacteria may be transported over long distances and render artificial inoculation unnecessary.

There are two general methods of soil inoculation. The first is to obtain some soil from a field in which the particular legume has been grown and found to have nodules upon the roots. The second is to use artificial cultures of the desired organisms prepared by a bacteriologist. Both methods have their advantages and disadvantages. Soil is expensive if it has to be transported any considerable distance but it is the surest and safest method of obtaining the desired organisms. In soil these organisms will retain their vitality for several years after the particular legume has been grown. The artificial culture can be transported long distances at small cost and applied with very little labor. Its disadvantage lies in the fact that under artificial conditions the bacteria lose their vitality more quickly, especially if foreign organisms get in, and thus are incapable of giving the desired results. An examination of a large number of commercial cultures has been made by the different experiment stations and they report that in some cases no living nodule bacteria could be found. The inoculation by what-

ever means should be made at the time of sowing the seed, since it has been found that the bacteria do not retain their vitality for any considerable length of time on the seed. In some cases seed dealers have attempted to inoculate the seed at the warehouse for their customers but there is no reason to expect that such seed would be more valuable than un-inoculated seed at the expiration of a week.

Since the discovery of the nitrogen fixing bacteria which live in association with leguminous plants it has been found that there are other classes of bacteria capable of transforming atmospheric nitrogen into forms suitable for the nourishment of plants and that these classes of bacteria may live independently of other organisms. The importance of this class of bacteria lies in its ability to work wherever conditions are favorable without reference to the presence of legumes. As an instance of the amount of nitrogen which these bacteria are able to accumulate a single example may be cited. A field belonging to the Rothamstead station in England was abandoned for 22 years, producing nothing but wild vegetation during that time. In spite of the losses inevitably suffered through leaching it was found at the end of the 22 years that the soil was richer in nitrogen by an amount equal to 132 pounds of nitrate of soda per acre. Another interesting fact is that this process appears to go on most abundantly in soils somewhat deficient in nitrogenous constituents. In soils which ordinarily contain appreciable amounts of nitrogenous material the bacteria, appear to become lazy and cease to lay hold upon the atmospheric nitrogen, presumably drawing upon the fairly large amount in the soil.

One of the great benefits which has resulted from the popular interest in soil inoculation is the better appreciation of the conditions necessary for the activity of these bacteria in the soil. No matter how good the inoculation is it will be a failure if the field soil is not in suitable condition for bacterial life. It must be porous enough to admit air; it must have a suitable supply of moisture because the bacteria cannot do their work in arid or swampy soils; it must be free from an excessive amount of acid; and above all, it must contain a fair amount of suitable organic matter. When these conditions are complied with it is often found that the desired bacteria become active, the reason being that although they had been formerly present in the soil they were unable to do their work because of the unsuitable environment. In other words it is fully as necessary to give the bacteria a chance to do their work as to introduce them into the soil. In a well tilled soil containing suitable supplies of moisture and organic matter these bacteria are able to fix in a form suitable for plant growth large amounts of nitrogen which they take from the atmosphere. Under proper conditions it is to be expected that the most of the nitrogen supply of the soil can be obtained in this way. I believe that it is largely to this supply of home grown nitrogen that we should look for the future. We know that the visible supply of nitrate is limited and as the supply diminishes it will be but natural that the price will increase. The present warfare in Europe is depleting the nitrate resources of the world more than the production of farm crops over that area in a century.

The relation of bacteria to nitrogen has been extensively studied because in so many cases the supply of nitrogen is the limiting factor in crop production. But we are beginning to find that the relation of bacteria to other nutrient elements is also important. We know that in heavy, swampy

soils the sulphates may be reduced to sulphides, and so be lost to the nourishment of plants. On the other hand it has been found that in suitable conditions there are bacteria which will convert sulphides into sulphates. The transformations of the organic sulphur compounds are undoubtedly of great importance, but they have been as yet, little studied. The same is true of the phosphorus compounds. Soil phosphates are taken up by the cells of the bacteria during their development and later returned to the soil as organic phosphorus upon their disintegration. In some cases it has been supposed that the bacteria compete actively with the growing crop for the supply of soil phosphates. These questions, among others, await further study. They will undoubtedly be found to have an important influence on the question of soil fertility.

The foregoing discussion is an attempt to present a viewpoint rather than to announce any new or important discoveries. I desire merely to emphasize the fact that the soil is a dynamic rather than a static system. It is a world in which great living forces are continually at work. The soil is not the same from day to day or indeed from hour to hour because there are living organisms working in it bringing about changes of both analytic and synthetic nature. The substratum changes just as our bodies continually change as a result of the analytic and synthetic actions going on in them. The soil is not a cupboard into which a certain amount of nutrient has been placed for the use of plant life and which will be useless as soon as a certain amount has been withdrawn. A new soil is created from day to day which if intelligently managed will give food for plant and animal for centuries to come. Thus will the soil prove to be our one great indestructible asset from whose products we may supply ourselves not only with food and clothing but fuel and shelter as well.

CITRUS FERTILIZERS APPLIED AT SHORTER INTERVALS

Instead of a semiannual application of fertilizers many citrus growers are coming to observe the more recent practice of three applications a year. It is possible that even more frequent applications would be beneficial. The same conditions which make plant foods easily and quickly available make them subject to leaching. If the customary portion of fertilizer is allowed a tree once a year, it is able to use only a small amount of that immediately. The remainder is exposed to the weather throughout the year.

If the application is spread over the entire year at suitable intervals the tree will make more economic use of the food and the loss from leaching will be reduced to the minimum. Furthermore the progress of the trees over the growing season probably would be more uniform.

B. F. Floyd, plant physiologist to the University of Florida experiment station, suggests that four or more light applications a year would be best provided that unfavorable conditions did not prevent. During drouth the applications would accumulate in the soil so that when rains began the results would be the same as one heavy application. If the tree were mulched and the fertilizer were applied under the mulch, the rising moisture from the lower soil probably would counteract the effects of the drouth. Within certain limits the smaller the amounts applied and the more frequent the interval the more efficient the fertilizer will be. On small trees half a pound to the acre every six weeks would be a good practice. If the applications are frequent the fertilizer should be complete so that a large enough quantity could be had to scatter beneath the tree. It is probable that the yearly amount which is allowed each tree under ordinary practices could be reduced somewhat by more frequent applications.

NOT SO MUCH

Doctor—"Well, I hope you profited by my advice."

Patient—"Yes, doctor; but not so much as you did."—Boston Transcript.

ABOUT THE FEIJOA

I have noted with pleasure the discussion of the feijoa in the Cultivator of December 16 by Walter C. Ficklin of Kerman.

There are now in Southern California several thousand fruiting feijoa bushes. The majority of these came into bearing for the first time this fall. Their average age was two years from the nursery. The fruits varied in size and form as is always the case with seedling trees. The quality seemed almost uniformly good. The prolific tendency was satisfactory where the trees were grown in sufficient numbers to provide cross pollination. The result has been an increased understanding and interest in the feijoa. Almost without exception those who have eaten the fruit have expressed a high appreciation of it. In talking with perhaps a hundred such persons this fall I have heard but one expression of dissatisfaction.

The hardy character of the feijoa is a strong point in its favor. It will stand a temperature of ten degrees above zero. This is going to make it possible for everyone to grow it. So that, taken as a whole, I believe we have had a good, strong advance in the matter of feijoa growing. It has come to the point of acceptance by so many people that its future is assured.

The work now before us is the selection of a few first class types and their sufficient propagation to enable the grower to produce in abundance fruits of good quality and uniformity. This work is being taken up by several interested nurserymen, and while the propagation of varieties will be a slow process the right start has been made and the development of feijoa growing will unquestionably proceed along safe and satisfactory lines.—F. O. Popenoe.

CITRUS SPECIAL CONVENTION

A special citrus convention will be held at San Bernardino during the National Orange Show. State Horticultural Commissioner Cook writes:

"This occasion gives rich promise. The orange discussion will be led by C. C. Chapman who will speak especially of the possible value of a 'brand'. The discussion of the lemon will be in charge of C. C. Teague. A. D. Shamel has kindly consented to speak of the pomelo. Important new facts will be presented. Marketing will be discussed by our new commissioner of marketing, Colonel Harris Weinstock. Dr. G. Harold Powell will speak on the problems of the citrus industry. The citrus outlook of Butte, Sacramento and Tulare Counties, will be presented by Fred Mason, W. W. Hinsey and H. Webster, respectively. Soils and soil fertility will be discussed by Dr. H. J. Webber, Messrs. I. G. McBeth and W. P. Kelley, three very able soil experts. The eight to one orange test will be explained. Professor H. J. Quayle will give the latest on fighting scale insects. E. O. Essig and H. C. Bryant will give lantern talks on insects and birds, respectively. Col. Weinstock will repeat the address which he gave at Visalia, which elicited great praise.

This convention will be held at the time of the National Orange Show. Two such exceptional attractions must draw a host of citrus growers to these meetings.

A one-day apple meeting will be conducted by Chief Deputy Commissioner G. P. Weldon on Saturday, February 19.

A SHORTER CATECHISM FOR IRRIGATIONISTS

1. What is irrigation? Irrigation is the art of cultivating the soil so thoroughly that a minimum amount of water is required for the proper growth of crops.

2. What is rotation? Rotation is the irrigation dairy farmers' best hope. It means abundant feed for the cows, full time for the butter factory, and salvation for the settlers who conscientiously and intelligently apply the principle to the working of their farms.

3. What are the benefits which in this life accompany or flow from irrigation and rotation? Revenue to keep

the wolf from the door, to develop the farm, and a good deal in addition to spend on other things if the settler makes dairying his chief aim in life.

4. What is the duty which is required of every irrigator? To work his farm to the best advantages and to live in peace and harmony with his neighbors.

5. What is forbidden to irrigators? To feed their stock on the roads and channel reserves, to have dirty farms and bad fences, and to be constant "kickers."

6. Are all transgressions of the law equally heinous? All are bad, but wasting water is the very worst, since it injures the home farm and the man next door; also it probably floods the road, interfering with the proper conduct of business, and causing much bad language, which is an abomination.

7. What is the chief end of man? To get water into the soil and to keep it there by thorough cultivation.—Irrigation Record, N. S. W., Australia.

IRRIGATE WHEN IT RAINS

Many people, particularly those who have been used to farming without irrigation, are liable to overestimate the value of summer showers. They may brighten the lawn and help the grass but there is no comparison with the lasting benefits of a normal application of irrigation water.

Last summer South Idaho experienced two weeks of showery weather to the damage of much hay. Probably two and a half inches of rain fell. The soil showed wetting for a foot to 18 inches below the surface. But three days after sunshine came the sandier soils showed need of irrigation.

All crops and all farmers demanded water at once instead of one crop and one farmer after another, as would have been the case had it not been for the rainy weather. While canals had been running part full, pumping plants shut down or run at part capacity during the wet weather, a week later many of them could not supply all the water the farmer could use to advantage and crops were damaged. It is easier to irrigate in showery weather and we should do it if we are to avoid these "runs" on the water supply.—E. W. Hamilton, Agricultural Engineer, Idaho Experiment Station.

IRRIGATION PUMPS IN JAPAN

Primitive methods still are employed in Japan for supplying water to the rice fields. The apparatus used consists essentially of an undershot mill-wheel in which power is applied to the wheel to raise the water. In other words, the operation of the wheel is reversed.

The construction of the wheel is ingenious, particularly in the case of the wheel operated by foot power. Each paddle is carried by a pair of spokes braced by a pair of struts that lie in the direction of the thrust of the operator's weight. At the end of each paddle wheel is a short treadle piece on which the operator walks.

Of course, the advantage of this water wheel lies in the fact that it can be made cheaply and the operating cost is low, because labor is cheap in the orient.—E. W. Hamilton, Agricultural Engineer, Idaho Experiment Station.

GREASE THAT PLOW!

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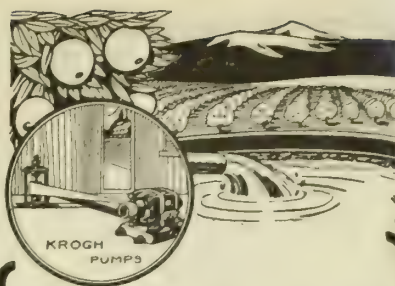
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HARNESS

Deciduous Fruits

SMYRNA FIG GROWING IN CALIFORNIA

By Henry Markarian

TO grow figs successfully in California one must study the nature of the soil and the climatic conditions. The best region to grow the world-famed Smyrna and White Adriatic figs for drying commercially would be that portion of the San Joaquin Valley that has Merced on the north and Bakersfield on the south. Other sections fairly adapted for fig culture are: in Northern California the region lying between Marysville and Red Bluff in the Sacramento Valley and in Southern California

the interior valleys where the climate is dry in summer, almost entirely rainless, free from summer fogs and excessive dews, where temperature ranges from 90 degrees to 100 degrees or over in the shade from June to September.

Heavy rich and deep soil, color inclining to be reddish with plenty of irrigation water is desirable. In this kind of soil planting from 33 by 33 to 40 by 40 is recommended. Red soil underlaid by red hardpan from 12 inches to three feet, if properly blasted, is good. This soil contains an abundance of iron, lime and potassium, so essential to growing figs. Although trees take one or two years longer to mature in this kind of soil, still it will produce clean, white and elegant fruit, with hardly any sour and splits. The life of the tree under these favorable conditions would almost be everlasting; in this kind of soil plant trees at 30 by 30. In sandy soil (drift sand), alkali and in places where the high water level is three feet below the surface, growing fig trees is an absolute failure. Bottom lands adjoining rivers are not suitable for growing figs, as the figs would incline to sour and split.

Leveling and Planting

In planting fig trees I recommend level land if possible, so that during irrigation water will not form into pools and cause stagnation. If not so, level the ground into large checks so that when irrigating the water can be held back, to give an even distribution over the entire surface of the land. Or grade the land similar to orange orchards and adapt the furrow method of irrigation. Run several furrows between the rows so that a stream of water can run down the furrows for two or three days each time when irrigating. This is necessary for two years after planting, in order to insure a rapid growth of trees, which will hasten the trees into early bearing.

The ground should be plowed not less than eight inches in depth in order to thoroughly break through the plowpan or crust. After the ground is well pulverized dig holes 18 to 20 inches deep.

The best time in the season for planting fig trees is in February and March. When planting go over your nursery stock and cut the trees to a uniform length of two feet from the cutting joints. This will allow the trees to branch or fork 20 inches above the ground, which is proper height. Wax the tips to prevent drying, then plant so that at least three inches of the cutting joint is down in the soil.

A very important factor in the planting of the fig tree is avoidance of undue exposure. When the trees are taken from the nursery bed they should be kept in a barrel of water and taken out of the water one by one in the course of planting, as the trees cannot stand more than ten minutes' exposure to the cold wind or hot sun. The fibrous roots are as fine as hair and can be easily dried up by this exposure. After planting the tree water it thoroughly to settle the earth around the roots to eliminate penetration of air, using at least ten gallons of water to a tree. The same precaution should be taken while the trees are heeled in in nursery. Do not neglect this or wait until you get ready for irrigation, as many trees have dried up in the course of three or four weeks without water. Then either use a tree protector or redwood stakes four feet long to brace the trees. Drive the stakes on the southwest side 14 inches deep and tie the tree to the stake. These stakes not only brace the trees but protect them from the severe frost and the hot afternoon sun which usually follows after the frost. I have found from personal experience that in all cases the effect of injury from frost

appears on the southwest side of the trees.

Irrigating

After one month or six weeks irrigate the trees or water with water wagon. If the former run a furrow on each side of the row, three feet away, and let the water run, but care must be taken not to let the water run into low places and form into deep pools, as young trees, especially those planted the first year, can as easily be drowned as dried. After each irrigation hoe around the trees as deeply as possible and cultivate deeply from three to four times. The trees should be irrigated during the months of June, July and August the first year, also the second year, and the years thereafter, during May and July. When the orchard is eight or ten years old flood method irrigation similar to the alfalfa system is recommended. Each time of irrigating must give the ground thorough soaking.

Planting Capri Trees

In growing Smyrna fig trees it is essential to plant from three to five capri trees to every hundred Smyrna trees, either in a grove by themselves where they will be convenient for your close observation, or in a row running through the center of the orchard.

The fig tree is different from all other fruit trees. Other deciduous trees first bloom before the fruit appears, after which the foliage and the fruit grow almost simultaneously. On the fig tree first the foliage appears, with some scattering figs, which are called early figs or first crop, then it begins its branch, from six to ten inches in length depending on the age of the tree. This growing period extends from the latter part of March to the 15th of May at which time the tree ceases to branch. Then the figs for the first time are plainly apparent on the tree. About three or four figs appear on the lower part of the branch during the first week of production, the second week about two or three more appear, and finally about one or two more figs appear at the end of the branch on the third week of production. Naturally the first figs that appear on the trees mature first, and this is why it is absolutely necessary to have the early, medium and late varieties of capri.

The selection of capri trees requires very careful attention. The respective values of the various species must be carefully studied, and they are as follows: The Markarian No. 2 and Roeding No. 3 ripen very early; Markarian No. 1 and Pseudocarica, medium early; and the Milco, the late capri. This succession in ripening prolongs the caprification season, thereby fertilizing all the available figs on the trees. The Pseudocarica has another important feature in that the pollen appears on the mamme, which fertilizes the first crop of Smyrna figs ripening in June. Hereafter all the first crop, or the June figs, went to waste for lack of pollination; the introduction of Pseudocarica however will save the early figs which can be shipped green and bring a good and handsome profit.

It is absolutely necessary to plant 60 per cent of the early maturing as this early capri means the pollination of 70 per cent of the crop. Plant 20 per cent each of the medium and late varieties, which together pollinize 30 per cent of the crop. My favorite capri are Markarian Nos. 1 and 2, Roeding No. 3 and the Milco and Pseudocarica.

Pruning Smyrnas

Fig trees do not require as much pruning as other deciduous fruit trees, nevertheless they should be pruned and shaped. Allow the trees to branch from 16 to 20 inches from the ground because if the trunks are allowed to grow more than two feet the trees will lean, be exposed to frost and sunburn and become stunted. Many fig growers prune high so that they may drive their teams under the trees to give a close cultivation, but they have ruined their trees. The fig tree must be shaped as nearly like an umbrella as possible in order to absolutely shade the trunk from

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frost and sun on all sides. I have further observed that all the large and vigorous trees are the trees whose trunks are well shaded. When the trees come to maturity at the fifth or sixth year they must be pruned back so that the lateral branches will become thick and dense, thus the foliage will prevent the sun from penetrating and burning the exposed limbs. This method must be followed every two years thereafter in order to make new lateral fruit wood and insure a large fruit and crop.

Pollination

The Smyrna figs contain nothing but female flowers and unless they are pollinated the fruit will grow to the size of a marble and drop off. Almost the same thing applies to the capri figs containing no insect; the fig grows three-quarters of its normal size and drops before maturing. The figs that carry over on the trees until they mature are fertile. The mamme fig is a winter crop, ripening about the first of April, the profichi matures in June and the mamme is a summer crop, maturing in fall. Each of these crops has a mission to perform. The mamme propagates or fertilizes the profichi, producing from 500 to 2000 capri figs to a tree. The profichi pollinates the Smyrna fig and produces from 5000 to 15,000 capri figs to a tree, sometimes producing more figs than leaves. It is well to remember that the entire crop of Smyrnas depends on the profichi. And lastly, the mamme, whose function is to preserve the life of one generation of the insect produces from 100 to 200 capri figs. The flowers of the capri figs are male.

The fig wasps, or blastophagas, live in the capri figs. They hatch three times a year (some varieties four). These blastophagas do not develop in the Smyrna fig but are employed as factors for carrying the pollen into the Smyrna fig. The male hatches first; he crawls about the interior of the fig seeking a gall which contains a female wasp. opens a hole with his powerful mandibles in the cortex of the ovary and impregnates the female while she is still inside of the gall. The female at once begins to enlarge the hole made by the male and crawls her way out of the gall.

When the profichi capri matures the stamens or male flowers appear in abundance and immediately the female wasps emerge from their birthplace (the capri fig) laden with pollen which collects on them while crawling through the cluster of stamens and finally out of the fig. Immediately they fly away, seeking a new home in which to lay their eggs for the next generation.

As already stated, the fig tree differs in many respects from all other

deciduous trees. The fig blooms inside when it is the size of a marble or a little larger, at which time one can get a whiff of fragrance from the tree when passing by. The insects, enticed by this odor, at once fly toward the fig and alight, seeking for the bud eye which is closed by overlapping bracts. They crawl in, but sometimes the overlapping bracts are so tightly closed that they are obliged to cut a way with their powerful mandibles to effect an entrance into the interior and then crawl through the orifice of the Smyrna fig, seeking for a gall flower in which to lay their eggs. In an endeavor to find such a place the insects come into constant contact and friction with the female flowers in the Smyrna fig and in so doing dispose of all the pollen which they collected. Disappointed, not finding gall flowers they emerge from the fig and perish.

While there is an abundance of profichi for the purpose of pollinating the Smyrna fig, nature has only provided a few mamme capri to connect the links of generation of the blastophaga, but needless to say these few insects multiply into myriads.

The female insect is black and has large wings; the male is red and wingless. The capri figs contain from 500 to 3000 wasps, one-fourth of which are male and three-fourths female. Of course these figures vary in the different species of capri.

Caprification

Caprification is very simple and intensely interesting. Any ordinary ranch hand in a few days can acquire sufficient knowledge to master the situation. After the Smyrna fig trees reach their maturity, which is the fifth or sixth year, depending largely on the attention, the trees must be caprifigged to reap the benefits from the orchard after years of waiting. The caprification season commences about the 10th of June and ends about the 5th of July.

To ascertain the ripeness of the caprifig, cut one open and you will observe that some male insects are visible (as already stated the male comes out in the fig first). This proves whether part of the female insects have emigrated or are about to emigrate. The practical way of picking caprifigs is to have a man go up to the tree with a ladder, and finding the soft figs, which are the ripe ones, drop them to the ground. Caprifigs, like other figs, do not mature all at one time. After the tree has been gone over the figs should be picked up from the ground as quickly as possible as they should not be exposed very long to the hot sun.

The best time in the day for picking caprifigs is from two o'clock in the afternoon until dark. Then about

four o'clock in the morning distribute them in the orchard. This work must be completed before the day gets warm, prior to nine o'clock, as the insects begin to come out at about this time and continue to issue for four hours after. After nine o'clock they should not be disturbed. A characteristic peculiarity of the capri is that after noon the insects cease to issue. This is the reason why the caprifigs should be picked in the afternoon and distributed early in the morning. The cost of picking and hanging the capri figs as often as is necessary will not exceed one dollar per acre.

Hang capri in wire baskets made with three-quarter inch wire mesh, four inches wide and ten inches deep, with a hook made from galvanized wire, which makes it easily removable from the tree. Hang five caprifigs in each five-year-old tree once a week for three weeks. As the trees get older the number must be increased as follows:

5-yr. tree, 15 capris:	5 every 8 days
6-yr. tree, 24 capris:	6 every 6 days
7-yr. tree, 50 capris:	10 every 5 days
8-yr. tree, 78 capris:	13 every 4 days
9-yr. tree, 104 capris:	13 every 3 days
10-yr. tree, 120 capris:	15 every 3 days
11-yr. tree, 144 capris:	18 every 3 days
12-yr. tree, 176 capris:	22 every 3 days

At the age of 15 years the tree is considered to be in its full bearing stage, and the amount of caprifigs to be hung on the trees will be from 175 to 200. The above figures are for normal sized trees. If the trees are exceptionally large apply a few more; if smaller than the average, a few less. In other words, apply according to the size of the tree.

Many growers have complained that the Smyrna fig does not produce as heavily as other figs. I have investigated and found that this shortage in every case is due to lack of sufficient pollination. My trees are now 12 years old and I have gone over my orchard eight times during the caprification season, hanging an average of 150 caprifigs to each tree, thereby giving my orchard a thorough caprification. If your caprifig supply is inadequate for your orchard, I should advise you to buy a sufficient quantity to thoroughly supply the requirements. They only cost five dollars per thousand, and I assure you it will not pay you to let your figs starve from lack of pollination. I have investigated the Smyrna figs after pollination and observed no injury sustained by excessive caprification.

Harvesting

The Smyrna fig ripens about the 15th or 20th of August and lasts until about the 1st of October. When the figs ripen they shrivel up and

drop from the trees to the ground. Then they are gathered or picked into 40 or 50-pound lug boxes once a week, after which they are hauled to the drying yard, spread on trays, stacked and covered and allowed to remain in stacks one week or ten days, until they are dry. The figs are then removed from the trays and washed in a water solution of five per cent and one-half of one per cent of lime. If the figs are too dry allow them to remain in water for about 20 minutes, after which remove and spread them back on the trays and stack. Let them remain in stack for one week, but late in the season spread the trays out in the sun till figs are dry, after that sort out all defectives and put in sweat boxes ready for delivery to the packing house. White Adriatics are processed in a similar way, except that the Adriatics are bleached by sulphur.

Smyrna Superior to Other Figs

It is sometimes claimed that the Adriatic fig is the best variety to plant on account of its heavy production. It should, however, be borne in mind that these heavily bearing Adriatic orchards are 25 years old. At the present time there are few Smyrna fig orchards in existence in California which are over 12 years old. And the erroneous information that the yield of the White Adriatic exceeds that of the Smyrna will be disproved when the Smyrna fig orchards planted in exceptionally rich and heavy soil reach the age of 25 years.

I have several reasons for advocating the growing of Smyrna figs. First, the superiority of the fruit; second, the quick maturity of trees (Smyrna fig trees mature in six years, White Adriatics in eight); third, the trees show very little or none of the root diseases so common to Adriatics; fourth, the trees are well adapted to orchard planting 30 by 30 feet apart, whereas the Adriatic at this distance would not be satisfactory. Furthermore, the tendency of the Smyrna fig tree root is to go downward and deeper into the soil, while those of the Adriatic have a tendency to spread circumferentially at a shallow depth; fifth, because the fruit is almost free from souring. The Smyrna fig may be shipped green and find a ready market.

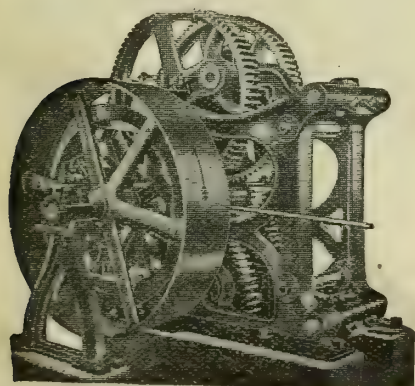
As to the production of the Smyrnas, it is very hard to give a definite maximum figure, as there are only a few orchards now in full bearing in the state, and practically all of these are in their primal state. The only data I can give is as to the comparative production of the Smyrna and Adriatic in my own orchard. Both varieties produce equally heavily and

Continued on Page 641

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FARMERS' UNION AND PRUNES

Continued from Page 635

ing. However it is doubtful if Santa Clara had more than half a crop in 1915, which would place the Union holdings at ten per cent of the total. Still the tail is too small to wag the dog.

In this year of 1915 the packers say that Santa Clara did not produce one-half of the state's prune crop. We growers don't know yet and maybe never will know on account of the juggling which the packers do with the crop. However if they want it to appear that Santa Clara is declining in its supremacy in prunes, their juggling defeats that end. It is common report that the packers buy prunes in other parts of the state, ship them to San Jose and pack and sell them as Santa Clara prunes. Such fruit may thus be twice listed in the state's production, first as a part of the yield of Sonoma, Napa and Tulare and second as a part of the yield of Santa Clara. Growers find no difficulty in securing data from transportation companies of the carloads of prunes shipped from San Jose, but as yet they seem unable to learn how many cars are shipped in from other counties.

That there is need of a strong growers' organization was probably never more strongly felt than during the year now drawing to a close. When the prune trees were in bloom, or even before, the packers began selling the 1915 crop. On the basis of bloom the crop would be the biggest ever, and the price was fixed accordingly at three and one-half cents a pound or thereabouts. Reports of the quantity sold varied from 500 to 1000 carloads, or from 20,000,000 to 40,000,000 pounds, and not near that quantity had been purchased from the growers. It was pure gambling (if gambling can be pure) and gambling not only in money but in the very life of hundreds of farmers who with their families are dependent upon this one crop. San Quentin is too good a place for such gamblers; the beds are too soft and the meals too appetizing. But that practice has gone on for years and will continue until the growers get close enough together to kill it. Everyone knows the result in 1915. Instead of a bumper crop there has been but little more than half a normal crop. The packers began trying to buy at a price low enough to meet their selling price, and early in the season bolstered their arguments to the grower with statements as to how big the

crop is "in the other end of the valley". Shortly the Cupertino Improvement Club issued a call for a growers' mass meeting to be held in May in San Jose for the purpose of comparing notes on the crop prospects. This meeting had three results. The crop was held to be about 70,000,000 pounds of dried prunes; a motion was passed that growers should not sell under a five-cent basis, and a committee was appointed to keep the growers informed during the season as to crop and market conditions.

The committee met every other Saturday and after careful consideration issued a report which was published the following day in the leading San Jose paper which enjoys a wide circulation throughout the country. As the season advanced the committee could find no reason to increase the early estimate of the crop, and by harvest time there was evidence that the early estimate was too high. Market conditions were kept constantly in mind and there likewise seemed no reason why the basis price of five cents fixed in May should be discounted. Hence the effort of the committee was to encourage growers to hold for that price.

The market hung around three and one-half cents all summer, sometimes up to nearly four cents and then down again, but mighty little business done. Harvest began about the middle of August and suddenly four cents was offered by the packers and that at times for the first picking only if delivered in August. This price prevailed with occasional spurts up to four and one-quarter cents, for two months, and many prunes were sold. Probably the larger portion of the prunes had passed out of the growers' hands by the last of October. For a crop of unusually large sizes four and one-half cents may have been paid, but the bulk went for less than that. On the evening of October 28 two or three parties told me they had been offered five cents that day. Ten days later offers of five and one-half cents were reported. Growers who had sold for four cents said that the price would have gone to five cents a month earlier if all the growers had refused to sell for less. But the growers did not stick together and maybe the packers did not receive the lesson they need—to stop gambling in bloom time.

Of course there is need of a strong growers' organization. Speculation and gambling must be eliminated if the growers are to receive fair returns and the market centers be kept in good humor. If all growers should pool their fruit with the Farmers' Union that organization could handle the situation. Its record thus far is that its returns to growers are equal to, or slightly above, the average prices received by growers who sold to packers.

PART OWNERSHIP

Most people in this country believe that the tenant is a menace and that the owner is more desirable because he maintains soil fertility by live stock farming and other good systems and manifests more public spirit. Others believe that with a system of long leases such as prevail in England the tenant would be able to conduct his operations with a much smaller investment and without many of the objectionable features of tenancy as it now exists in this country. We will have to readjust our ideas somewhat radically to reach the present English condition, but many of the advantages of ownership and tenancy can perhaps be combined without any revolution in our present ideas, according to O. R. Johnson of the farm management department of the University of Missouri.

In a survey of the western part of Johnson County the department found that the size of a farm business has a close relation to the income which the farmer receives for his work and that small owners may often enlarge their operations by renting additional land. This part owner stands with the owner in the social matters, both from the standpoint of the individual and that of the community which he is helping to improve. In fact in the region surveyed he spent even more for his family living than the man who was renting no land. This includes

what he grew on the farm, and he was much more nearly self-sustaining because he produced a greater portion of his living on the farm and bought less of it at the stores. The interest chargeable on his total investment was less than two-thirds as great as in case of the owner, for the total investments were \$7633 and \$12,555 respectively. It must be remembered that even after renting some land from others these part owners had only about seven and one-half acres more land apiece than the owners, and ten acres more than the tenants with whom they are compared. The actual figures were 143.6, 136 and 133.5 acres respectively.

To a considerable extent the matter may be summed up by saying that the owner made a labor income of \$314 a year on 136 acres, the part owner \$456 on 143.6 acres, and the tenant \$531 on 133.5, but many people would be willing to pay the additional \$45 a year for the advantage of knowing that it would not be necessary to move in a year or two, make new friends, and establish a system on a new farm. The difference between labor income the part owners and tenants have is more than counterbalanced by the higher standard of living of the part owner who spent \$64 a year more on family living. The average owner in that region probably does not realize that his labor income is as far below that of the tenant or part owner as Mr. Johnson's figures show. He does not realize that so great a portion of what he regards as income is not income from his labor but from the money investment which his land represents.

THE THIEF OF TIME

Development of rail shipment of farm products in carload lots has forced the grower to become a student of transportation as well as of agriculture. Demurrage, the money penalty shippers must pay for undue delay in unloading ships or freight cars, which was first exacted in 1887 at the most congested terminals, is now collected on all roads at all stations. Forty-five of the 48 states—all except Delaware, Utah and Wyoming—have railroad commissions or similar bodies. In 12 states demurrage is regulated by statutes and in 23 states by orders of the railroad commissions.

A uniform code for interstate traffic has been adopted by ten states—Indiana, Iowa, Kentucky, Louisiana, Maryland, New Hampshire, North Carolina, Ohio, Tennessee and Wisconsin. The office of markets of the department of agriculture has made a summary of demurrage information for farmers in Bulletin No. 191 which should be carefully studied by every shipper who is sending carload lots.

The value of the enforcement of demurrage laws is not merely to release cars to benefit the railroads but to prevent car shortages which farmers face each year. The shipper who takes two to seven days to load or unload a car, when he should do it in as many hours, is robbing someone else of the use of this car at a later period; it is right that he should pay for his delay in starting the car on its way.

The department of agriculture declares that the persons responsible for car detention are business men who find it more profitable to use cars for storage than to provide other facilities; they are willing to pay demurrage for the store room.

As a rule farmers are not transgressors of this law. Their products are perishable, and they are usually anxious to ship quickly. The few carload shipments they receive are removed quickly upon arrival. To enforce demurrage requirements, however, it is necessary that the farmer conform to the same schedule of charges as the manufacturer. He can afford to do this as insurance against a scarcity of cars at a time when he has a large amount of perishable products awaiting shipment.—Country Gentleman.

HE WON

Vox Populi—"Do you think you've boosted your circulation by giving a year's subscription for the biggest potato raised in the county?"

The Editor—"Mebbe not; but I got four barrels of samples."—Chicago News.

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Questions

THE EDITOR



and Answers

AND STAFF

Questions to be answered in this department should be received at this office one week before reply is expected. Write plainly on one side of the paper and sign full name and address. Unsigned communications receive no attention.

Black Color of Olives

How can I retain the black color of ripe California olives?—Subscriber, Los Angeles.

This question was referred to Prof. Frederick T. Bioletti who was asked as to whether any chemical or substance could be added to aid in keeping the color. He answers: "I know of no chemical which can be legitimately used for retaining the black color of ripe olives. The color is kept or intensified by skillful handling of the lye treatment and exposure to the air at intervals during this treatment. The exact method used varies with the different producers who make more or less of a mystery of the matter. In a general way the process consists of a partial lye treatment with a fairly strong lye one and one-half to two per cent followed by aeration for 24 to 48 hours and a supplementary treatment with a weak lye, say from three-quarters to one per cent, until the lye treatment is complete, with supplementary aeration with the weak lye treatment if necessary."

\$732 from One-fifth Acre

A subscriber at Lodi writes of his experience in making large sums from small acreage, stating that he has made \$732 from one-fifth of an acre in rhubarb and that it is one of many crops that will pay for good care. As this means a return of \$3660 per acre it appeals to us that great caution should be exercised on the part of other producers in counting on such abnormal returns. Only a specialist, under the best of conditions, can make small tracts of land produce enormous sums. We give this warning because of much suffering caused by the uninitiated trying to do the work of the expert.

Feeding Spineless Cactus

In your issue of the Cultivator of the 16th one of your subscribers wishes to know how to feed spineless cactus. I have raised it for the last couple of years and fed to my chickens. I take a slab and slice it open and throw in the pen with the sliced side up. The chickens will pick all the inside out until the rind is as thin as paper and look for more. I have some growing where I built another yard for some of my White Orpingtons and they are eating it off the stalk, where they can find a place to get through the rind.—C. S. Eichholtz, Pasadena.

Oak Root Fungus

An El Monte subscriber left at this office a specimen of root from a dying walnut tree which was seriously affected the subscriber thought by oak root fungus, though to his knowledge no oak trees had grown on the affected land. The root was sent to Prof. H. S. Fawcett and he replies: "The specimen appears to contain without much doubt the oak root fungus."

Feeding Pumpkins to Hens

Will you tell me if it is all right to feed chickens pumpkins? — Subscriber, Snelling.

No hen of my acquaintance will eat

raw pumpkin. If they would, and I had the pumpkins, I would certainly let them have one to peck at occasionally. Of course, the pumpkin does not supply much in the way of material for egg manufacture, but it might take the place of a part of the green feed.—J. A. K.

SMYRNA FIG GROWING

Continued from Page 639

both are constantly increasing the average of production per acre, until it has reached its present average of over two tons. This amount will increase as the trees grow older and will doubtless reach a maximum of four to five tons per acre when in full bearing at the age of 15 years.

In all my years of experience in fig culture in California I have never seen a total failure. We have had severe frosts and early September rainstorms which lessened the crop to only one-fifth of its normal production but never totally destroyed it.

Conclusion

I am fully convinced, judging from unabated activity shown in the production of Smyrna figs that fig culture is destined to become one of the leading fruit industries of California. Turkish statistics show that the annual production of Smyrna figs in Menderis Valley in Asia Minor is over 120,000 camel loads, each camel load averaging 600 pounds, making a total of 72,000,000 pounds. Of this output one-half is exported to the United States. The total output of figs from California is about 6000 tons, 1000 tons of which is of the Smyrna variety, which indicates that 80 per cent of the figs consumed in the United States is of the Smyrna variety.

As the industry grows there doubtless will be a constant increase in price of the Smyrnas. The price per pound ranges from five and one-half to seven cents at present whereas the Adriatic is bringing from three and three-quarters to four cents per pound.

The following table shows production of Smyrnas in different soils.

	Exceptionally Heavy Rich Soil. 40x40. 27 Trees to an Acre.....	Extra Heavy Rich Soil. 40 Trees to an Acre.....	Very Heavy Soil. 30x30. 48 Trees to an Acre.....	Medium Soil. 25x25. 69 Trees to an Acre.....
5th year	283	420	500	725
6th year	457	680	800	1173
7th year	675	1000	1200	1725
8th year	918	1320	1600	2208
9th year	1242	1680	2050	2967
10th year	1590	2040	2500	3419
11th year	2000	2450	3000	3735
12th year	2450	2960	3500	4000
13th year	2950	3600	3900	*
14th year	3450	4100	4300	
15th year	4000	4600	4600	
16th year	4500	5000	†	
17th year	4950	5400	‡	
18th year	5350			
19th year	5750			
x20th year	6150			

*Full bearing.

†Full bearing possibly 6000 pounds.

‡Full bearing possibly 8000 pounds.

xFull bearing possibly 10,000 pounds.

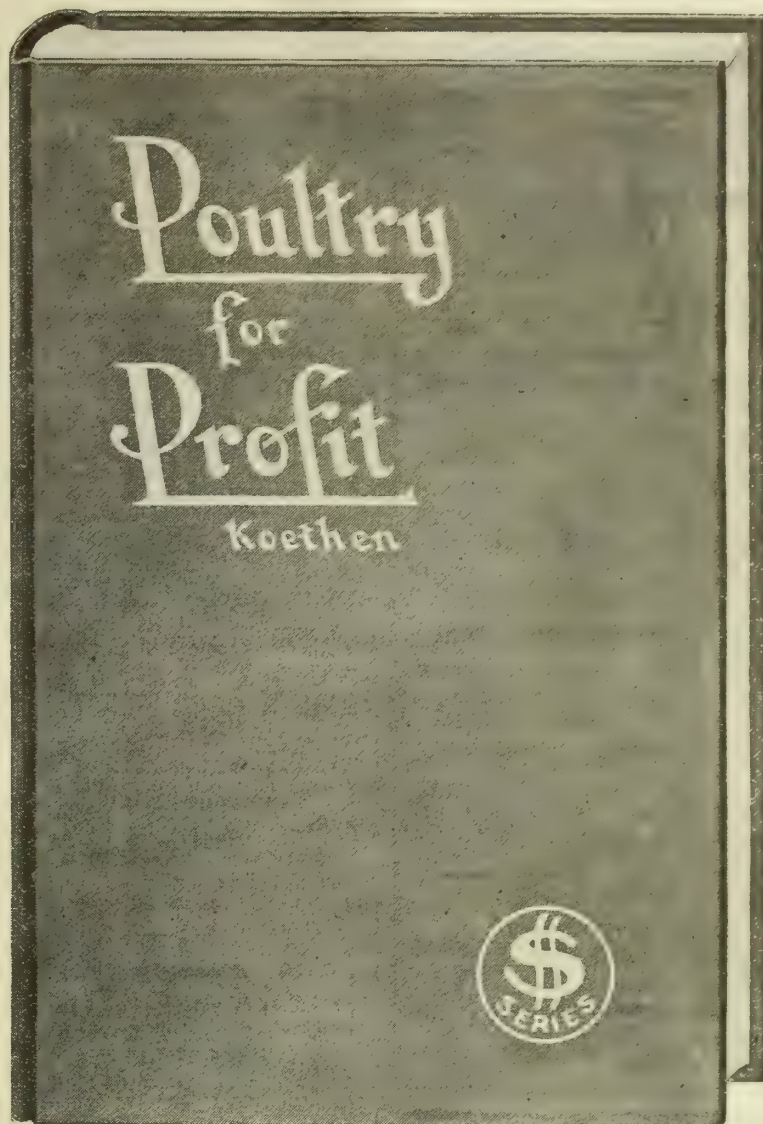
The above table is for Smyrna figs but it can be applied to the White Adriatic with the exception that the Adriatic comes into bearing maturity two years later.

the Cultivator Poultry Book

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by

Jean A. Koethen



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The author of this manual has covered the subject fully, giving the salient features and practices of an enlightened poultry culture as it applies to California conditions, based largely on personal experiences, and intelligent compilations from recognized authorities.

THE RIVERSIDE PRESS SAYS:

The Press is in receipt of a copy of this work, called "Poultry for Profit," and has no hesitation in commending it to either the "backlotter" who keeps a few chicks for his own pleasure, to the fancier who works to the "standard," and to the commercial poultryman who makes a business of poultry culture. Before its publication, the manuscript of "Poultry for Profit" was submitted to practical poultrymen, to experts and simple poultry enthusiasts, and all agreed that it was more comprehensive, more readable and vastly more helpful than any similar poultry book yet published. It covers the widest range, discussing breeds, feeds, diseases, housing, marketing and answers the thousand and one questions that even the expert poultryman sometimes has to ask and the amateur is ever asking.

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The
Lawn
and



**Flower
Garden**

AN ATTRACTIVE BACKYARD

NOTHING adds to the attractiveness of the home like a well kept backyard, and nothing detracts so much as an ill-kept yard.

Many people seem to think that if they have the front yard clean and "primed" that it doesn't matter about the back part of the yard. It is often made a dumping place for the refuse that is not wanted in the front yard, which should be carried to the gullies, if there happen to be any. You often see the woodyard reach almost up to the kitchen porch or door and the chips kept well-soaked with the dish water.

I can't indorse these conditions. If any part of the yard is neglected, let it be the front yard. If one will adopt that rule, there will be no neglected yards, for one is sure not to neglect the front yard. A filthy backyard in summer is a menace to the health of the family and should not be tolerated. Buckets should be kept on hand to catch all the refuse water from the kitchen. These should be kept well covered in fly time. Where the dish-water is emptied in the backyard it makes a good breeding place for the flies. They will swarm over it for days.

The back yard can not only be kept clean, but it can be made really attractive. Most every farmer loves

THE GARDEN BEAUTIFUL

The Garden Beautiful is a jewel for this part of the country. One ought to be in every home; it is the long-needed inspiration the people have been seeking.—Wm. T. Shield, President Pasadena Horticultural Society.

flowers, but there are too many that do not take the pains that they should in growing them. We all love to pass a home and see beautiful flowers growing and blooming in the yard, or perhaps go into the home and see a pretty bouquet on the dining room table. Flowers help to keep the heart young and this is much to consider. We have often heard it said that the hand that loved to work with and handle the flowers was not lacking in human kindness. And we believe there is something to it. We farm folks are very busy during the crop time, and perhaps we think we haven't any time to devote to the growing of flowers, unless there is money in it, but it will pay to have flowers in the yard, at least.

For the back yard there is nothing prettier than the old fashioned roses. To me they are the most beautiful flower of all. To be sure they are fit to grace the front yard, but why can't we make the backyard beautiful too? Plant roses all around the edge of the yard as a background. They are easy to grow and will last a lifetime. Then have a bunch or two of the sweet-smelling honeysuckle. Make a small frame for these to run on and they are also there for years. Then we want a few flowers planted to grow from the seed. The sweet peas should not be left out. Then there are the old-fashioned pinks that grandmother used to grow in her garden.

If you have a back porch, plant morning glories and train them to a wire and see what a beautiful shade they will make. I am sure that every family will be happier and healthier by making their backyards clean and attractive.—Farmers' Guide.

Fallen leaves should be raked off the lawn and piled in some out-of-the-way place and allowed to decay. They are useful in the garden when well decayed.

DEVASTATING EELWORM

The devastating eelworm, or, to give it its scientific name, the *Tylenchus devastatrix*, has been found again in the Pacific Northwest several hundred miles from the point where it was discovered in 1913. This tiny thread-like organism is a member of the great family of nematodes and is remarkably destructive to many forms of bulbous plants. Commercially its chief importance is due to its ravages in onion fields, but it also feeds to a great extent upon flowering bulbs such as hyacinths and upon such crops as rye, oats, hemp, potatoes, strawberries, etc. This pest has proved extremely destructive in parts of Europe, particularly in Holland, and in Australia as well. Hitherto the United States appears to have been practically free from it, but the new infestation in the Northwest following upon that of two years ago indicates the existence of danger that it may establish itself here. The devastating eelworm thrives best in moist regions where the temperature varies to a comparatively small extent. These climatic conditions are found in Holland and in the areas in the Pacific Northwest where the pest has been discovered. On the other hand there is reason to believe that this particular nematode will not survive cold winters in which the ground is frozen solid for a considerable depth, or that at least it will not become a serious menace under such conditions.

The devastating eelworm is so small that although under the most favorable circumstances it may occasionally be detected with the naked eye it is practically certain to escape observation. As in the case of microbes its presence is usually made known only by its effects. The young nematodes hatching from eggs laid in the infested plant feed on the juices and tissues of the plant until it is destroyed. They multiply with extraordinary rapidity so that the bulb soon swarms with them, and they also often find their way into the upper leaves. In the case of the onion the leaves of the affected plants become swollen and flabby and the bulb soft and puffy. The whole plant has a peculiar stunted and distorted appearance, and ultimately the bulb rots away. If a portion of the bulb or one of the swollen leaves be placed in a dish of water and observed under a magnifying glass, tiny transparent worms may be seen escaping into the water. This is perhaps the most convenient method for the farmer to ascertain what is killing his onion crop.

Once a crop has become infested with these nematodes there is no known cure. In fact there is no known way of absolutely eradicating any of the soil-inhabiting, plant-infesting nematodes. The most effective measure is to starve the pest out either by allowing the land to lie fallow or by planting it to crops that furnish little or no nourishment to the eelworm. Corn and barley are among the crops recommended for this purpose. It is cheaper, however, to prevent the pests gaining a foothold than to fight them in this way. Any diseased plant should be uprooted and burned at once, and no bulbs or seed should be purchased from localities where the devastating eelworm is known to exist, for the pest is most commonly spread by shipments of infected bulbs and seeds. The eggs and larvae of this species of nematode have been known to revive after having been in a lethargic condition in the upper layers of the soil for years. Once a nematode has gained a footing in any locality it may spread in any number of ways. Running water, the feet of men and animals, and infected plant material blown about by the wind are among the most common means.

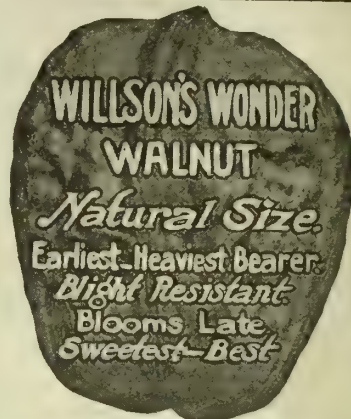
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Louis B. Stanton, attorney, 243 Wilcox Building, Los Angeles, will answer legal queries in this department.

Immediate mail replies cannot be given except where fee to Mr. Stanton is paid. When replies are wished in Cultivator address query to 115½ N. Broadway, Los Angeles.

Closing Up Mortgage

I allowed quarterly interest on a mortgage to become overdue. The mortgagee with an idea of foreclosure traced up the title at an expense of \$7.50. I paid the mortgage and interest when due and have a letter written by mortgagee acknowledging check, but he refuses to send mortgage papers until I pay title fee of \$7.50. I have deed and clear title. What is best to do?—Subscriber, Orange.

As you have paid the mortgage and interest in full, it would hardly seem that a mortgagee was entitled to receive the additional amount for tracing title upon a foreclosure which never took place.

Liability for Polluted Water

Water is pumped from a well on an estate and a portion of it is sold to nearby neighbors for household and farm stock use. In case the water should become infected with typhoid or other disease germs and the neighbors are taken ill, to what extent is estate liable?—Subscriber.

There would hardly seem to be any personal liability unless through negligence upon the part of the well-owner the water became infected. It is declared unlawful to supply polluted water however. This refers only to such case when a person supplying the water knows that it is polluted. The matter may then be taken before the board of health for investigation of the plant.

Obstructing Highway

A owns house and lot. B rents a place by the month and conducts eating house. B builds house in the street and fences it. Can B hold street by possession or how can A proceed to open up right-of-way to his lot?—Subscriber, Los Olivos.

If a highway is encroached upon by fences, buildings or otherwise, the road overseer of the district may require the encroachment to be removed. The notice orders the removal within ten days from date of service of notice upon the occupant; if it is not removed, the one causing the encroachment forfeits \$10 per day for each day the same continues, and it is the duty of the overseer if the encroachment obstructs the road for vehicles to forthwith remove it. If the owner of the encroachment refuses to move, the road overseers must commence an action to abate the encroachment as a nuisance and also for the recovery of \$10 per day for each day it is maintained after serving notice. All penalties must be recovered by the road overseer or commissioner of the road district in the name of the county and be paid into the road fund.

Rental

A sold five acres of bare land to B. B did not pay his mortgage and the mortgage was foreclosed five months since. Can A attach anything, crops or real estate that B owns as payment for rent?—Subscriber, Chula Vista.

Where real property is sold at foreclosure sale defendant who remains in possession is a tenant in possession and liable as such to account to the purchaser for the value of the use and occupation. If the land is vacant the mortgagee is entitled to proceed to occupy the same and is entitled to use thereof, subject only to the right of redemption of the mortgagor.

Possible Slander

A cares for groves belonging to non-resident owners. B has been reporting that A is letting his groves suffer for want of care; that the pumps have not been kept running, etc. How can A protect himself?—Subscriber.

If A has lost any contract by reason of the untruthful statements of B he may bring action against B for the amount which he would have received under that contract if he had been enabled to carry it out. The statements may possibly approach the law of slander, but slander is quite difficult to prove.

Right to Water

A has an artesian well on his ranch and allows his neighbor, B, to erect a tank at the well and attach a pipe through which some water is carried to B's house, some distance, free. Does the arrangement ever become a

fixed attachment? If so, after how long a time?—Subscriber.

Five years is the period necessary to acquire a right by prescription in or to real property. The mode commonly taken to evidence the fact that a mere license is granted is to at least once a year for a day discontinue the use. In this case it would be either advisable to shut off the water once a year for a day or to have a contract drawn whereby the party receiving the water admitted that he had no right thereto, other than the gift of the owner of the property.

School Districts

A is a school district, B is another district adjoining. A votes bonds and builds a new school house, B by the sanction of the county superintendent of schools and by an act of the board of supervisors some eight or nine years ago took a one-quarter section off A and annexed it to B, and

again about two years later took another quarter section. The excuse was that children living on said land were nearer to B than to A. Can A collect from B the amount of taxes due on bonds and how far back? What would be the procedure to collect the same?—Subscriber.

In a question such as the above, which rests peculiarly upon the exact facts, which are necessarily stated incompletely, it would be advisable to take the matter up with the district attorney or county counsel of your county, who would be in a position to give thorough and accurate consideration of the matter without cost to you and which would be far more satisfactory than any mere guess which could be given here upon the incomplete data furnished.

To stay young some put lotions on to the skin; while others, wiser, put comfort into the hearts of their fellow men.

Save Money on Wire Fencing!

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This class of fencing is known all over the country and usually sells for considerably more. First placed on the market some ten years ago to meet the demand for a substantial combination stock and poultry fencing.

It is closely woven and made of No. 14 galvanized wire, the spaces between the wires being graduated from the small mesh at bottom to keep chickens in, to the regular stock fence mesh at top. Has heavy cable edge at top and bottom, which enables it to withstand sudden shocks without injuring the fence.

Ten rods to roll and sold in full rolls only.

Height inches	Approx. Wt. per rod	Stays inches	Bars number	Price per roll
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45	8	6	17	4.90
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A great special buy, amounting to almost a full carload, in these much wanted sizes. Remember, it's all perfect in every way.

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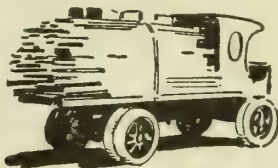
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PAINTS! PAINTS! PAINTS! WE BEAT 'EM ALL PRICES



Our paint department is now in full swing, a complete stock having reached us since the recent fire. We can give you the lowest prices ever on paints, brushes and painting supplies.

Standard House and Floor Paint \$1.50 gallon.
Standard Porch Paint \$1.75 per gallon.
Black Graphite Roof Paint 50c gallon in 5 gallon lots.
Standard Shingle Stain 50c gallon in 5 gallon lots. All colors except grey.



Oregon Pine \$10 to \$15

—Good new rough Oregon Pine Lumber, all sizes, at \$10 to \$15 per thousand.
—Oregon Pine Lath, 4 ft., new, \$2.50 per thousand.

—Best grade Slashed Grain Oregon Pine, sanded finish, \$37.50 per thousand. This makes a beautiful interior finish.

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\$30 Wallboard \$19.00

The highest grade wallboard on the market: made of 3 layers of moisture-proof fibre, with asphaltum between each layer; or cream white fibre board. Cheaper and neater than plaster or lumber and any one can install it in one-quarter of the time. Per 1000 square feet \$19.00



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The California CultivatorRural Californian Combined with the
California CultivatorA Journal of Horticulture and
Agriculture

By

THE CULTIVATOR PUBLISHING CO.,
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C. B. Messenger, Editor.

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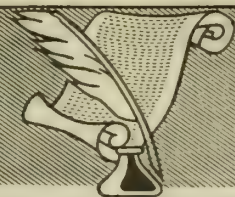
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The California Cultivator is a Member of

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Building, New York.
C. A. Cour, Globe Bldg.,
St. Louis, Mo.Entered at the Post Office at Los An-
geles, California, as Second-Class Matter.**Thursday, Dec. 30, 1915****OUR ADVERTISERS RELIABLE**We guarantee our subscribers against
loss through dishonesty of any adver-
tiser in the Cultivator. We do not at-
tempt, however, to adjust trifling differ-
ences between subscribers and honest,
responsible advertisers, nor will we pay
the debts of honest bankrupts. Notice
of complaint must be sent us within 30
days from date of the transaction, and
the subscriber must have mentioned the
Cultivator when writing the advertiser.**1916 ORANGE DAY**Plans are already in the mak-
ing for a more general observation
of Orange Day for 1916. It is prob-
able that Orange Day in 1915 in-
creased the consumption of oranges
during that season by many hundreds
of carloads. It gave opportunity for
department stores and large gro-
ceries to feature displays of oranges,
and as we buy with our eyes, it re-
sulted in greatly increased demand.
The Exchange is doing some mag-
nificent work along publicity lines.**BEFORE THE GRAND JURY**Stanislaus has its grand jury
investigating as to the control of
weed pests in that county. County
Horticultural Commissioner Ruther-
ford has been doing some efficient
work in his fight against Russian thistle,
sand bur and Spanish cocklebur
and is appealing for power to do still
more.Grand juries have been used to in-
vestigate many abuses; we do not
see why they cannot investigate what
rights the cockleburs have in Stani-
slaus County.**LESS WHEAT**Reports from the bureau of
crop estimates of the department of
agriculture indicate that there will
be less winter wheat grown than last
year by 11.3 per cent. Very few
states will equal their last year's out-
put and those that have incresed
their plantings will be the smaller
producing states. New Mexico, for
example will plant 30 per cent more
wheat than last year; Missouri and
Nevada each show a planting of 120
per cent of last year's. The present
indications are that there will be
about 42,000,000 bushels planted over
the United States.**OLEOMARGARINE**The National Dairy Associa-
tion, an organization formed to pro-
tect the dairy industry from fraud-
ulent sales of substitutes for dairy
butter, is continuing its fight for pure
food products. The great contention
between the manufacturers of oleo-
margarine and the dairy people is the
coloring of oleomargarine. The nat-
ural color of oleomargarine is white,
and the natural color of butter is yel-
low, and when oleo is colored in imi-
tation of yellow butter it brings from
five to 20 cents a pound more than
when it is uncolored. The coloring
yellow of any imitation, or substitute
for butter, is done for the purpose of
using this trademark and to make de-
ception possible. The dairy cow can-
not stand against this unfair compe-tion than ever before is on the way.
A still more ambitious plan that was
broached at the last state fruit grow-
ers' convention was for a federation
of all cooperative marketing organi-
zations. Therefore in cooperative
marketing fields, with such a leader
as Commissioner Weinstock, there is
promise for a brighter new year for
California producers.Speed the day when we may all be
joined in an effort to secure just
treatment to the producers.**INDEX**Volume XLV of the California
Cultivator is completed. It is a vol-
ume of permanent value. Material is
given on the citrus industry which
can be found nowhere else. Some of
the best culturists of the state have
written new "copy" of great value on
deciduous trees and vines. Many
special articles on potatoes and other
garden and field crops may be found.**TO OUR FRIENDS**ADVERTISING is a subject to which few readers give sufficient
thought, and yet it is of vital importance to them considered
from an educational standpoint alone.Do you realize that men are paid from \$10,000 to \$50,000 a
year for their ability to write advertising copy?You will find some of this splendid ability shown in the columns of
the California Cultivator, and we wish to impress upon you the fact that
there is interesting, instructive and beneficial reading to be found in
our advertising columns. Of course we know there are a lot of subjects
discussed there that may not interest every reader; on the other hand,
there is not an issue that does not contain an advertisement that will
give you some new idea, add to your comfort, and in all probability save
you money. For this reason it is to your interest that you pay some
attention to these columns.In the advertising columns you find the story of the world's com-
mercial progress. Ninety per cent of all the new inventions are first
brought to public notice through advertising.We want every reader to take an interest in the advertisements
appearing in the California Cultivator because they help to provide the
financial support of this paper. All these advertisers are first class busi-
ness concerns which have been investigated and are guaranteed by the
publisher. Buy their goods whenever you can; it will be appreciated by
us if you mention this paper.That we have faith in our advertisers is shown in the short item on
this page "Our Advertisers Reliable."tition for "where substitution is pos-
sible, competition is impossible."**THE NEW YEAR**It is natural to look into the
new year with hope that it holds for
us more of prosperity and happiness
than has the past year, and while
there are a few who are naturally of
a pessimistic turn of mind, the
greater number of us prefer the
brighter outlook, and fortunately the
world is growing better and more
prosperous year by year and our ex-
pectations have some degree at least
of realization. It is true we look at
some conditions as they are today in
other countries and ask, "Is the world
really growing better?" But brought
closer to our own home, we believe
this question readily reveals an affir-
mative answer. Financially there is
certainly a brighter outlook on New
Years Day of 1916 than there was 12
months ago. Brought to our own
state, one proof that this is the case
is the more general determination to
stand together in marketing our
products.The Cultivator has preached coop-
eration in season and out of season
and has much of happiness in the fact
that with a state marketing commis-
sion, with olive men organizing, with
peach growers having already prac-
tically completed plans of organiza-
tion, with the bean growers of Ven-
tura and Orange Counties getting to-
gether, with the prune men, while not
completely organized having commit-
tees at work and an understanding
with each other which has been of
wonderful benefit during the past
year, with the cooperative canneries
affiliating and seeking their own re-
tail market, more effective coopera-The ornamental garden department
has been eagerly looked forward to.
One of the best features of this de-
partment and of the vegetable garden
department is the planting calendar
given in the first issue of every
month. This feature will be continued
another year. The live stock indus-
try has been given much attention
and has been especially well illus-
trated. Articles in the poultry de-
partment have called for many com-
pliments because of their most prac-
tical nature. The household depart-
ment has featured a series of contests
for subscribers which has brought in
hundreds of valuable recipes and
hints which are preserved in this vol-
ume for those who file their Cultiva-
tors. The popularity of the legal
department has been shown by the
ever increasing number of questions
coming to it. The veterinary like-
wise is proving most helpful, espe-
cially to those who are not accessible
to a practicing veterinarian. A glance
over the index which appears on
Pages 654 and 655 will show the great
amount of valuable matter which may
be made of permanent value to our
subscribers if they have saved their
copies and file with this index.
Scarcely a mail comes to this office
but has a question for our question
and answer department which has
been answered in a preceding num-
ber, and these are answered by send-
ing to the inquirer former copies.
With the aid of this index these ques-
tions may often be answered immedi-
ately without the necessity of delay
caused by writing to this office. Not-
withstanding, we again extend most
hearty invitation to all to avail them-
selves of the Cultivator's help in any
problem to which we can possibly
secure the answer.Illustrations appearing during the
year are also indexed for quick refer-
ence. These illustrations are of par-
ticular interest because so many have
been taken on the ground by our staff
photographers and give at a glance
information that perhaps could not be
so clearly given in a column of read-
ing matter.**Agricultural Notes**Nine million pounds of dried vege-
tables are being contracted for in
New York for the use of the French
army.Australia has 100,000,000 bushels of
wheat for export this year; now the
problem is to secure boats for trans-
portation.A decree of November 22 prohibits
the exportation from France of grape
residue, walnuts and other nuts, al-
monds and fruit stones.Japanese rice has formerly been
marketed chiefly in the United States
and Hawaii; this year Great Britain
is a close second as rice buyer.Chile is experimenting with grow-
ing sugar cane in various sections. It
is hoped that the sugar industry may
be developed to good proportions.Preliminary figures compiled by
statistical authorities show that the
European beet sugar crop for the
1915-16 season will show a reduction
for Europe, as a whole, of 20 per cent.Western Australia has undertaken
the conduct of many transportation
lines and business industries. The
premier reports that the state steam-
ers showed a loss of \$35,000, the saw-
mills a profit of \$135,000.Owing to the large crop of Canad-
ian plums and peaches this year the
Canadian government through the
fruit branch of the department of
agriculture conducted an advertising
campaign in the daily and weekly
newspapers.Due to war conditions, American
sugar exports in the year ending May
30, 1915, increased over 1000 per cent
in value and 900 per cent in volume,
while the net gain per ton in the
prices received by the exporter in-
creased over 25 per cent.The state of Pennsylvania has a
new workmen's compensation law,
and at a conference of the state board
with railroad officers in Philadelphia
recently, all of the principal railroads
of the state announced their intention
of accepting the provisions of the law.The college of agriculture of the
University of the Philippines, the
only large agricultural college to be
found in the tropics at present, is in
its sixth year, and has a student body
of nearly 400. It occupies a large
tract of land on which every impor-
tant crop in the Philippines is under
cultivation.Because much of the land usually
planted to tomatoes in Italy has this
year been put in corn by orders of
the government to insure war sup-
plies the Norwegian fish packers who
formerly packed their fish in Italian
tomato sauce are inquiring into pos-
sibility of securing this tomato sauce
from the United States.The bacteria which cause citrus
canker are capable of living in the soil
after the infected citrus trees have
been destroyed. This fact has been
brought out by investigations of the
plant pathology department of the
Florida experiment station and by
observations of the employes of the
state plant board. "In view of this
dangerous phase of citrus canker in-
fection," said Mr. Newell, "the state
plant board prohibits the planting of
crops of any kind on ground where
citrus canker has occurred, until such
time as the board considers the land
free from danger of the infection by
the canker organisms. Land where in-
fected trees have grown should not
even be passed over or entered by
people or livestock."

Agricultural News Notes



of the Pacific Coast

Northern California

The newly formed Peach Growers' Association has been holding meetings in Solano County.

The Vacaville Fruit Growers' Association, at its recent annual meeting elected T. H. Buckingham president.

The Berkshire Swine Breeders' Association is planning a sale at the Sacramento fair grounds in the near future.

The 1916 convention of the California Creamery Operators' Association will be held in Ferndale, Humboldt County.

The establishment of a cannery at Oroville for fruits and vegetables is being considered by the California Ripe Olive Company.

This year's production of rice for the state is estimated at over 50,000 tons. Butte County alone has produced about 500 sacks this year.

Orange growers of Butte County have appointed a committee to carry on the campaign against the eight-to-one maturity test for tree-ripened fruit.

Growers of many districts in Butte County are taking active interest in the proposed plan to plant more largely to the same shipping varieties of deciduous fruits.

There will be a potato meeting at Sebastopol January 29, held under the direction of State Horticultural Commissioner Cook. Decline of crops will be the subject of discussion.

The Humboldt County Dairymen's Association, at its last monthly meeting in Ferndale, appointed a committee to ask the county supervisors for the appointment of a veterinarian.

The petition for the formation of an irrigation district at Paradise, Butte County, has more than the required number of signatures. This proposed irrigation district will take in 10,000 acres.

The Solano County farm bureau, through Farm Adviser J. W. Mills is asking for the stationing of a government agent in the district between Dixon and Montezuma to give particular attention to rice and vegetables.

The Sacramento Valley Development Association, which is starting a fight against the water grass pest in the rice fields, has drawn up ordinances for suppressing the pest for submission to the various boards of county supervisors.

Short course students in dairy manufacture at the university farm at Davis have organized an association to be called The California Dairy Manufacturers' Short Course Alumni Association. It is planned to hold an annual meeting of this association at Davis during each short course.

The state water commission announces that it has appropriated \$1500 for the study of the use of water in rice growing in California. The investigations will be conducted by Frank Adams, irrigation expert of the United States department of agriculture. The department will also join in providing funds to conduct the investigation.

Central California

The Merced creamery paid out over \$8000 for butter fat during the month of November.

The Miller & Lux vs. Stevenson irrigation case, which has been in the courts for many years, now faces a fourth trial.

The Central California Cattlemen's Association has passed a resolution offering \$1000 reward for the arrest and conviction of cattle stealers.

The Turlock and Modesto Irrigation districts are considering a proposal to unite in building a storage reservoir on the Tuolumne River.

Orange growers of the San Joaquin Valley expect to ship out 4200 carloads for the season. Most of the crop was sent out in time to catch the Christmas trade.

The Central California Cattlemen's Association is planning a membership campaign which will materialize in the organization of members owning at least 25,000 head of stock.

The board of supervisors of Tulare County has passed an ordinance providing for the inspection of all grape vines coming into the county to prevent admission of phylloxera.

A half million dollar corporation has been organized to develop a dairy farm on the old Gray Brothers' ranch east of Oakdale in Stanislaus County. The stock will be Holsteins.

The California Wine Association has announced that it will settle for all Zinfandels delivered to them on a ten-dollar-a-ton basis, the first installment to be paid any time after January 1.

County Horticultural Commissioner Roullard of Fresno County states that the cost of inspecting green fruit under the new standardization act which went into effect on August 9 was over \$3000 to Fresno County.

The central committee of the California Peach Association has appointed a committee to consult with bankers to arrange for a general meeting of the clearing house association to consider the plans of the association.

More than 90 cows belonging to members of the Stanislaus County Cow Testing Association have exceeded 45 pounds during the month of November. A Guernsey owned by Joseph Longley of Hughson leads with a production of 82.2 pounds butter fat.

A number of arrests of cattle thieves have been made in Kern County recently. These arrests will be prosecuted by the Central Stockmen's Association. This association has for its purpose the protection of cattle of members from thieving and extends its operations over six counties.

Four carloads of oranges were sent from Merryman, Tulare County, a few days ago, loaded in cars fitted with an electric wiring system to furnish artificial heat. The cars were designed and the oranges packed under direction of experts of the bureau of plant industry of the United States department of agriculture.

Southern California

The Fontana Poultry Association has taken out articles of incorporation.

The Olive Hillside Groves Association of Orange County shipped out 73 carloads of oranges last season.

The cotton growers held a meeting at Brawley in connection with the Agricultural Assembly December 18.

Sierra Madre has passed an ordinance requiring owners of one cow to pay a dairy license if they sell milk outside the family.

The La Habra Citrus Association is building an addition to its packing plant. This with the new machinery installed will cost \$30,000.

The Ventura County Dried Fruit Association is making its final payments to members for the 1914 crop. Much of the 1915 crop is still in warehouses.

The Orange County Poultry Fanciers' Association will hold its annual show at Santa Ana January 18-22. A number of valuable prizes are announced.

Plans for the main buildings on the new citrus experiment station grounds at Riverside have been approved by the university. These buildings will cost over \$100,000.

Rialto has been assured that for the time being at least it will not lose its rural delivery route. Announcement had been made that the rural route would be discontinued the first of the year.

According to the Oxnard Courier bean growers have decided to eliminate the 80-pound bean sack so long used for marketing limas and other varieties and beginning next year will use nothing but 100-pound sacks.

The Associated Chambers of Commerce of Orange County have decided to have a county exhibit at the National Orange Show at San Bernardino in February. Each chamber of commerce will be represented by one member on the exhibit committee.

The Agricultural Assembly brought a great influx of visitors to Brawley. This farm assembly is to become a permanent feature of Imperial Valley's agricultural industry. There will be a series of meetings in every section of the county during February.

The San Antonio Growers' Association has adopted constitution and by-laws for a permanent organization of deciduous fruit growers in the district between Pomona and San Bernardino. This organization will erect two packing houses and a dry yard, one at Ontario and one at Chino.

Representatives of bean growing districts of Ventura County met at Ventura Saturday, December 11, and drafted by-laws for the proposed organization of bean growers. These will be submitted to the warehouse district units for approval and membership signature. It was decided that all growers be asked to sign a five-year contract with the association.

The Coast

Several sales of hops are reported in Portland at 11½ cents.

The Northwestern apple market seems inclined to stay down.

Preparation is being made for many plantings on the Yuma project.

The University of Arizona will hold its annual short course for farmers January 3-15.

Many plantings of walnuts are being made in the Wenatchee district of Washington.

Fruit growers of Hood River, Oregon, won nine gold medals at the Panama-Pacific.

The Arizona Cattle Growers' annual convention will be held at Prescott January 10-12.

The National Wool Growers' Association will convene at Salt Lake City, Utah, January 13-15.

The Mesa Poultry and Pet Stock Association will hold its annual show at Mesa, Arizona, January 20-22.

The Idaho State Poultry Association will hold its annual show in Moscow the week of January 24.

It is rumored that many changes are to be made in the apple marketing associations of the Northwest.

The convention of the National Live Stock Association will be in session at El Paso, Texas, January 25-27.

During the farmers' short course to be held at Tucson the Arizona Irrigation Conference will hold its second annual.

Denver, Colorado, will be the scene of the National Western Stock Show. The show will be on from the 17th to the 22nd of January.

The Arizona Cattle Growers will convene at Prescott January 10. President Heard of the National Cattle Growers' Association will be present.

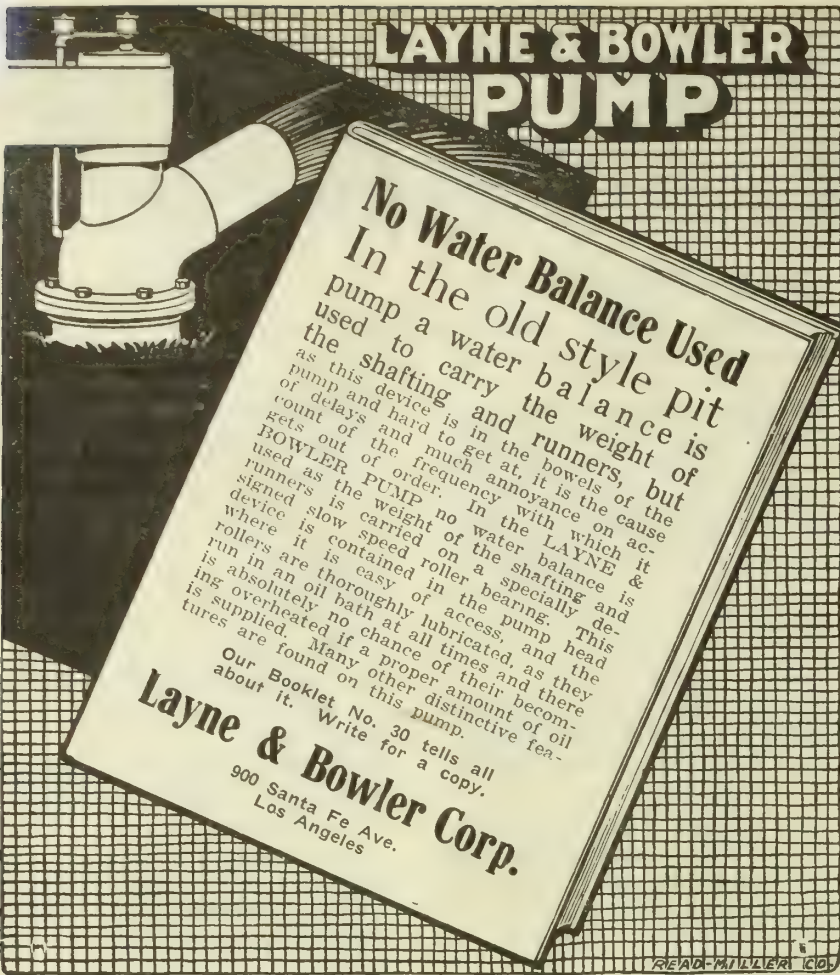
Livestock raisers in the Chandler district of Arizona met December 18 to discuss formation of an organization to obtain better market prices to the grower.

Farmers of the Salt River Valley of Arizona are being assisted in their fight for better market prices by the County Farm Improvement Associations and commercial organizations of business men.

Berry growers of the Puyallup Valley of Washington are making poultry raising a side line. They are planning to handle their poultry product through their berry associations' selling organizations.

Farmers of Maricopa County, Arizona, have shipped out ten carloads of sour clover seed to California this season. Farm Adviser Armstrong is credited with calling the value of this seed to the attention of farmers. It was formerly regarded a waste product.

The Arizona Farm Improvement Association is suggesting to bean growers of the state that they get together and store their beans in a warehouse in the community and market in larger lots, as it is difficult to find sale for a few bags here and a few bags there.



LAYNE & BOWLER PUMP

No Water Balance Used In the old style pit pump

used to carry the weight of the shafting and runners, but as this device is in the bowels of the pump and hard to get at, it is the cause of delays and much annoyance on account of the frequency with which it gets out of order. In the LAYNE & BOWLER PUMP no water balance is used as the weight of the shafting and runners is carried on a specially designed roller bearing. This device is slow speed and head run in an oil bath at all times and there is absolutely no chance of their becoming overheated if a proper amount of oil is supplied. Many other distinctive features are found on this pump.

Our Booklet No. 30 tells all about it. Write for a copy.

Layne & Bowler Corp.
900 Santa Fe Ave.
Los Angeles

Live Stock and Dairy

PRICKLY PEARS FOR DAIRY COWS

THE prickly pear, specialists of the United States department of agriculture say, has now been demonstrated to be a good and palatable feed for dairy cows. They have been fed in Texas and Mexico for many years, but their value has not been fully appreciated. Recent experiments by the department of agriculture have shown, however, that this feed can be used much more extensively and can form a much larger proportion of the ration than was believed possible heretofore.

There is no reason why prickly pears should not come into general use for feed in all sections where they can be readily grown. Under proper climatic and soil conditions the prickly pear is a perfectly practicable farm crop. At Brownsville, Texas, the average annual yield for the first two years' growth from cuttings was about 40 tons, and at San Antonio about 25 tons an acre. After the first two years a yield of 50 to 100 per cent more can be expected. Irrigation is unnecessary and the cost of growing the crop is therefore small in comparison with the tonnage produced.

The prickly pear, it is found, contains approximately ten per cent of dry matter, the remainder being water. If it is assumed that the nutritive values of the different kinds of feed vary in direct proportion to their content of dry matter, one pound of sorghum hay equals 15.9 pounds of prickly pear when the latter is fed in large quantities, and 10.1 pounds when fed moderately. One pound of sorghum silage was found to equal two and six-tenths pounds of prickly pear and one pound of cottonseed hulls equal five and eight-tenths.

From 60 to 100 pounds of prickly pear, three and six-tenths of sorghum, and one of cottonseed meal a day made a maintenance ration for a Jersey mature cow when dry. If no sorghum hay is available the amount of prickly pear should be increased to 110 pounds and the cottonseed meal to two pounds. Experiments show, however, that it is best to feed not more than 60 to 75 pounds of prickly pears a day. When 120 to 150 pounds were fed, excessive scouring followed, and in addition the laxative effect of the feed made it extremely difficult to keep the stable in a sanitary condition.

In general it may be said that cows like prickly pear and eat it with relish. The feed, according to the experiments, causes an increase in the quantity of milk produced but a slight decrease in the total production of butter fat. This decrease becomes more pronounced as the quantity of prickly pear in the ration is increased. Butter produced on a prickly pear ration is highly colored but neither its flavor nor the keeping quality of the milk is noticeably influenced. From the experiments it is noticed, however, that cows fed upon prickly pears appear to be more sensitive to "northers" than those which receive a dry roughage. The greater the quantity of the plant consumed the more the milk production fell off during these storms. On the other hand the feeding of prickly pear appeared to have no influence on the offspring of the cows nor on the condition of the mothers after birth.

The cost of feeding prickly pear will depend naturally on local conditions. There is no great difference between the spiny and the spineless varieties in their values as feed, but the cost of harvesting the latter is less. On the other hand the spiny varieties yielded a larger tonnage to the acre in Brownsville and are not so susceptible to insect depredation. They are also more hardy and can be grown on a much larger area. The cost of singeing the spines off was approximately 50 cents a ton. The

most common method of removing them is by singeing with a strong gasoline torch, a machine specially constructed for this purpose being on the market.

BALANCED DAIRY RATIOMS

Most feeders of dairy cows can produce protein more cheaply than they can buy it, according to C. H. Eckles of the dairy department of the Missouri college of agriculture. Wise is the man who has a good supply of legume forage on hand from his alfalfa, clover, cowpea, or soybean fields, for the dairy cow cannot do her best on corn, timothy hay, or fodder even with good succulent silage to help maintain summer pasture conditions.

Bran at a dollar a hundred furnishes protein at a cost of about eight and a half cents a pound, while cottonseed at \$1.90 per hundred furnishes it at a cost of little over five cents a pound. The cost of producing the protein on the farm in alfalfa, clover or other leguminous crops varies with local conditions so that no such definite figures can be given, but almost any farmer should be able to supply himself at much less than five cents a pound. If he has neglected to do so, however, he must purchase protein in some form to supplement the abundance of silage and corn which he undoubtedly has on hand under Missouri conditions.

Feeding two pounds of cottonseed meal a day to a cow that has been giving milk on such a ration as corn, fodder, and timothy hay will increase the flow to a surprising degree. In spite of the many things that have combined to raise the price of cottonseed meal this year, it is probably the cheapest concentrate to buy for this purpose.

Some good dairy rations which Professor Eckles suggests in Missouri agricultural experiment station Circular 44 are:

(1) Corn silage	25 lbs.
Clover hay	10 lbs.
Corn	4 lbs.
Bran	4 lbs.
(2) Corn silage	30 lbs.
Alfalfa or cowpea hay	10 lbs.
Corn	6 lbs.
Bran	2 lbs.
(3) Clover hay	20 lbs.
Corn	4 to 5 lbs.
Bran or oats	2-4 lbs.
(4) Clover hay	20 lbs.
Corn and cob meal	5 to 7 lbs.
Gluten or cottonseed meal	2 lbs.
(5) Alfalfa or cowpea hay	10 lbs.
Corn fodder	10 lbs.
Corn	5 to 7 lbs.
Bran	2 lbs.
(6) Alfalfa or cowpea hay	15-20 lbs.
Corn	8-10 lbs.

Each of these rations includes a whole day's feed for the ordinary cow, half to be given in the morning and the other half in the evening, but they are not intended for the cow of unusual dairy capacity or one that is being fed for heavy production or to make a record. The amounts specified are those to be fed to a cow giving from 20 to 25 pounds of milk a day, and cows giving more than this should receive more feed, especially more grain, while those giving less milk should have the grain cut down. The general plan followed is to give each cow all the roughage she will eat and about one pound of grain for each three pounds of milk produced.

BABY BEEF

A creep should be provided in the pasture so that calves may have access to grain without being disturbed by cows, as it is very important to start beef calves on grain before they are weaned. They may be kept in a separate lot into which the cows are turned twice a day if this method is preferred. In this case there will of course be no need for creeps or anything else to keep cows from the grain which may be fed at

First Annual Auction Sale of Purebred Hogs

under the auspices of the

California Swine Breeders Association

will be held at the

State Fair Grounds, Sacramento, Cal.

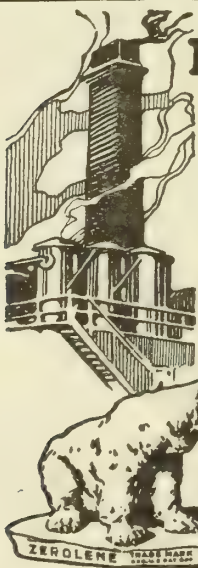
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January 27, 1916

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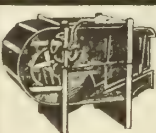
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such times that the cows will not disturb the calves.

The calves may be started on a mixture of two parts of shelled corn to one part of oats by weight. The oats may be gradually reduced until none is being fed at the end of eight weeks, but while this is being done a little old process linseed oil meal or cottonseed meal should be added and the quantity gradually increased until it makes up about one-seventh of the weight of the ration. On full feed calves should eat about two pounds of grain for every hundred pounds live weight in addition to good roughage. Wellbred calves handled in this way should be in prime condition at the end of about ten or twelve months.—H. O. Allison, Missouri College of Agriculture.

PRODUCTION OF SILAGE

On cover page may be seen photograph of two silos on the ranch of Frampton Brothers at Artesia. On this page is given another photo of the field from which the silage was secured, which surely shows a magnificent growth of corn. Both these photos were taken by Mr. E. W. Cochems of Hynes. The local paper commenting upon the Framptons' production says:

"We challenge the world to equal Artesia in the production of corn to the acre. We believe that the Frampton Brothers grew more corn to the acre than has ever been grown anywhere by anyone. They harvested 330 tons of corn from 964 acres, filling two concrete silos 14 feet in diameter and 41½ feet high, letting the ensilage settle and refilling till the silos were entirely full of settled silage. The silo books recommend 12 acres of corn to fill one such silo.

"Not only was there such a growth of stalk reaching 18 feet high but the grain was very heavy—most of the stalks grew two ears of corn, well filled and averaging 12 inches in length with the lower ear sometimes reaching 11 or more feet from the ground—a wonderful exhibit of what Artesia land, water and climate can produce when properly united.

"This is not a freak crop, as Mr. Frampton says he is willing to back up his assertion that he can at least duplicate the yield on the same land another year."

POTATOES AS HOG FEED

Because of the surplus of white or Irish potatoes now on the market and the consequent low prices many farmers have been seeking information as to the possibility of feeding them to hogs.

Many experiments have been conducted in Germany and other foreign countries as well as a few in the United States to determine the value of potatoes as feed for swine. In Ireland and Germany farmers feed large quantities of potatoes annually. From experimental data it has been concluded that four to four and a half bushels of potatoes when cooked are equal to about one bushel of corn for putting gains on hogs. Therefore if corn is worth 80 cents a bushel, potatoes when fed to hogs would be worth only 18 to 20 cents a bushel. There may however be instances where it would be more advantageous for the farmer to feed to hogs right on his own place at least part of his crop rather than to haul these potatoes to an already overloaded market.

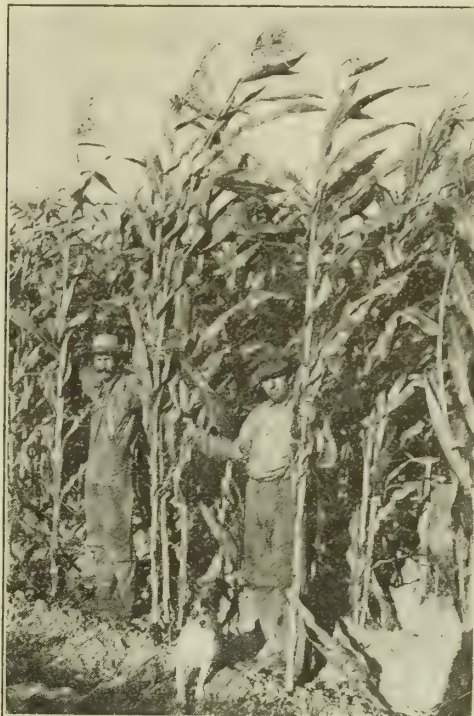
According to the consensus of opinion potatoes are fed to the best advantage when cooked or steamed and mixed with other feeds. Experiments in which raw potatoes were fed alone have been reported. In certain instances the raw potatoes are said to have caused scours. However raw potatoes in small quantities and in a diet lacking succulence may be conducive to health in pigs.

In cooking potatoes only enough water should be used to make a mealy mash and prevent burning. The resultant meal should then be mixed with corn meal or other grain supplement. Tankage, skim milk, or meat meal would probably add to the profit of the mixture. Potatoes when pre-

pared in the manner described and under the conditions mentioned can often be fed to pigs with advantage.

A CURE FOR BLOAT

Recently it has been found that formalin is an efficient remedy for animals suffering from bloat. This should be given as soon as possible after the animals are noticed to be in pain and the left side greatly distended. Ruminants, such as sheep and cattle, are most frequently affected. Cows should be drenched with one quart of water to which has been added 40 cubic centimeters of formalin—this is one-quarter of a cup, or about three tablespoons. One-fourth of this amount is sufficient for sheep. Relief usually comes inside of 20 minutes, and there are no bad effects follow-



ing, such as the results from the use of the trocar and canula, or "sticking" with a knife.—R. H. Williams, Animal Husbandman, University of Arizona.

AS TO WOOL

Some printed statements convey the impression that the entire fleece goes into the production of a garment, so that the amount of finished cloth is equal to the amount of scoured wool. This impression is erroneous. A number of tests reported by different mills show that for woolen goods from four pounds to four and sixty-four hundredths pounds of grease wool were required to make one pound of cloth. For worsted cloths from two and fifty-six hundredths pounds to four and fifty-five hundredths pounds of grease wool was required.

SUNFLOWERS

Frequent inquiries are received at the Washington experiment station concerning the growing of sunflowers. Dr. Cardiff, director of the experiment station, gives the following information on this plant as an agricultural crop:

The sunflower is an important agricultural crop, though it has not been used to any great extent in this country. It is cultivated quite extensively in Russia and used for a variety of purposes. It makes excellent silage, especially when mixed with corn and some legume in about equal parts of each. The seed has an unusually high oil and protein content. On account of the latter its growth rapidly exhausts the nitrogen from the soil and, therefore, if grown successively on land, the soil will require considerable fertilizer. The oil portion does not exhaust the soil since the elements from which oil is made come from the air and water.

The seed is used in the production of oil, which is extracted by compression, and is of value for table use, cooking purposes, and in general the same use as is made of olive oil.

In Russia the seeds of the larger seeded varieties are sold as peanuts and are in this country, and eaten raw.



Health First

If a cow is well—if her organs of production are doing their duty—she will yield well. Time was when the cow that became sluggish and seemed to be going backward was promptly sold to the butcher.

Thousands of cow owners have found that in most cases proper treatment will save them the difference between the price of a beef cow and a vigorous milch cow.

Most dairy cow ailments are simple if the source of the trouble is reached. If the organs of production or reproduction are not doing their duty, try Kow-Kure—the medicine for run-down cows. It has worked wonders in many herds, and is especially recommended for the prevention and cure of Abortion, Barrenness, Milk Fever, Scouring, Lost Appetite, Bunches, Retained Afterbirth, etc.

Keep Kow-Kure on hand constantly. Sold in 50c. and \$1.00 packages by feed dealers and druggists.

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The plant has also been used quite extensively in paper manufacture in some of the European countries.

The sunflower should be grown upon soil which is suitable for corn and planted and cultivated about the

I would not take \$10 for the instruction I have received from your valuable paper in the last five months. I shall take it as long as I am able and I will try to get others to take it. Those legal queries are splendid. Wishing you much success, I am very respectfully, U. F. Griswold, Potrero.

same as corn, though it will stand a little earlier planting than the latter on account of its greater resistance to frost. It is a crop well worthy of further attention.

UP TO THE WISHBONE

Said an English clergyman, "Patriotism is the backbone of the British Empire; and what we have to do is to train that backbone and bring it to the front."—Christian Intelligence.



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BUTTER SCORING CONTEST

The sixth and last entry of the 1915 educational butter scoring contest was scored in San Francisco, December 21. Interest in the contests has kept up remarkably well during the whole year and at this last scoring there were entries from 21 creameries. A good percentage of these buttermakers have taken part in the entire year's work regardless of the unfavorable conditions which existed when one or two of the entries were called for. The scoring of the current entry was done by T. J. Harris, official inspector of the San Francisco Wholesale Dairy Produce Exchange, L. M. Davis and H. S. Baird of the university farm, Davis. The results were as follows:

P. Bernasconi, Harmony Valley Creamery, Harmony, 91½.

B. Berthelsen, Los Angeles Creamery Co., Hanford, 92.

John Clausen, Riverdale Co-op. Creamery, Riverdale, 91½.

Glenn Decow, Mission Creamery, Peiris, 91½.

A. L. Doty, Alturas Creamery, Alturas, 91½.

W. P. Everts, Exeter Creamery, Exeter, 91½.

W. J. Grinsell, Libby, McNeill & Libby, Loleta, 91½.

Ed Hooper, Spreckels Market Creamery, San Francisco, 93½.

L. Klokler, University Farm Creamery, Davis, 92.

Simon Koppes, Montague Creamery, Montague, 93.

L. Larsen, Sunset Creamery, Loleta, 94½.

Bert Myers, Los Angeles Creamery Co., San Luis Obispo, 91½.

Wm. Oekers, Sierra Valley Creamery, Loyalton, 91.

E. O'Mara, Heber Co-op. Creamery, Heber, 92.

Peter Petersen, Valley Flower Co-op. Creamery, Ferndale, 92½.

J. C. Phillips, Delta Creamery, Imperial, 92.

G. G. Plunkett, Tulare Co-op. Creamery, Tulare, 92½.

J. W. Smith, Santa Rosa Creamery, Santa Rosa, 93½.

J. W. Thorp, Morsdale Farm Creamery, Stockton, 90.

The average score of the entire lot was held down by the large number of entries which were of only ordinary quality. Mechanical defects of some sort found in practically every cube reduced the average score by one full point, but regardless of this the average score was lower than it should be when it is considered that the butter sent is representative of what practically every creamery is sending to its market. Various conditions are responsible for the slump in quality at this time of the year. In many of the creameries the make is now at its lowest point, some of the above entries coming from plants where the churning is not done every day. These creameries are as a rule equipped to take good care of the cream, but when it becomes necessary to hold

cream several days there is a decided handicap. This is true the more when it is realized that the dairymen are producing less cream now and that frequently the cream is held longer on the dairy. Almost without exception the criticisms made on the flavor of the butter point to improper care of handling of the cream, or too long holding. What are California creamerymen and dairymen going to do about this poor butter problem? No one seems to see a solution, though many realize the seriousness of the situation. If the systematic campaign which has been proposed and which is being studied out, can be started, it behooves every one whose interest centers in the butter business to lend his individual support. The one thing which is certain is that cooperation on this matter will accomplish more than many different lines of individual effort.

Summary for 1915

During the year a total of 51 different buttermakers took some part in the scoring contest. Twenty-five different counties were represented and entries were received at several of the scorings from creameries in Nevada. Under the 1915 plan certificates were to be issued for the following averages: Grade A certificate—average score of 92 or above on six entries. Grade B certificate—average score of 93 or above on five entries. Grade C certificate—average score of 90 to 92 on six entries.

Buttermakers who secured certificates were: Grade A—L. Larsen, Loleta, California, average score 93.5. Grade A—W. J. Grinsell, Loleta, California, average score 93.16. Grade A—B. Berthelsen, Hanford, California, average score 92.41. Grade A—G. G. Plunkett, Tulare, California, average score 92.25. Grade A—Ed Hooper, San Francisco, California, average score 92.08. Grade A—Simon Koppes, Montague, California, average score 92. Grade B—J. C. Phillips, Imperial, California, average score 91.58. Grade C—Glenn Decow, Peiris, California, average score 91.5. Grade C—P. Bernasconi, Harmony, California, average score 90.

MEASURING HAY IN STACK

For obtaining the number of tons of hay in a stack, the first step is to measure the width and length with a tape line, and then what is known as the overthrow, that is, pass a tape line from the bottom of the stack on one side over to the bottom on the other side, and divide this measurement which is called the overthrow by three, then multiply the length by the width, and this by one-third of the overthrow—this gives you the number of cubic feet in the stack. Of course, if the stack is different widths or different heights you will have to take the measurements in several places and obtain the average of these by adding them together and dividing by the number of measurements made.

The number of cubic feet of hay per ton varies considerably with the length of time that it has been stacked. With newly stacked hay it will take about 500 cubic feet to equal a ton. If it has been stacked for two to three months, from 350 to 400 cubic feet will equal a ton. After you have obtained the number of cubic feet in the stack, divide by the number of cubic feet in a ton, taking into consideration the length of time that the hay has been stacked.—I. H. C. Service.

HARD TOO

Thaddeus Stevens and all members of the house tell one anecdote of an occurrence in which Mr. Stevens and the Speaker of the House got into a sharp tangle, ending in Stevens savagely rolling up some documents on which he had been addressing the chair, and turning his back to the Speaker in the most impolite way while passing furiously up the aisle toward the cloak room.

"Is the gentleman trying to show his contempt for the Speaker?" shouted that dignitary.

"No," thundered back Stevens, turning around and facing the wielder of the gavel; "I am trying to conceal it!"—Life.



Answers in this column by Dr. Wm. Petrie, 2714 South Harvard Blvd., Los Angeles, are without charge. For immediate mail answer remit \$1.00. In writing questions give full symptoms or particulars of injury of animal.

Founder

Horse six years old is in splendid condition but gets a stiffness in the cords of both front and hind legs, just cripples around and the frogs in his front feet seem to be rotten. The blacksmith has tried shoeing him different ways with no satisfactory results. I paid a big price for this horse less than a year ago. He has always had this trouble I found out later.—Subscriber.

Sounds like chronic laminitis (founder). The trouble is all in the feet and probably most of it in the front feet. Blistering just above the hoofs and soaking the feet in cold water or removing the shoes and allowing him to run in a wet pasture will give temporary relief but a permanent cure is not known for such cases. By leaving him barefooted and only working him on the farm he may get along well, but such horses can not stand road work.

Tuberculin Test

How is the tuberculin test applied to cows and is it considered perfectly satisfactory?—Subscriber, Pomona.

To test an animal for tuberculosis one should inject two cubic centimeters of tuberculin under the skin with an hypodermic syringe, preferably about the shoulder. Then by taking the temperature every three hours for 48 hours you can decide whether tuberculosis is present or not. If the temperature is not affected by the treatment then you may feel safe that the animal is not affected, but if the temperature rises three degrees or more during the two days after the injection the probabilities are that the animal is affected with tuberculosis.

A more recent method of applying the test is by injecting a few drops of the tuberculin fluid into the skin near the root of the tail. If the animal is affected with tuberculosis a very marked swelling will appear in the parts about the place the fluid was injected, but if no swelling follows then one may feel safe that the animal is free from the disease. The latter method does not require the use of the thermometer.

The test for tuberculosis should only be applied by one familiar with medicine and surgery and should be done antiseptically; otherwise more harm than good may be done. You ask if the test is considered perfectly satisfactory: No, not in all cases, but when applied by one who understands it it usually proves right and satisfactory. Those things are so often tried by those who do not know how to use a hypodermic syringe or thermometer and their failures have given the test a bad name.

PETER, THE YOUNGER

Boatman—"Peter an' me'll not be able to take ye out fishin' tonight, Ma'am; but Peter's nephew will be a fatter taken' ye av ye like!"

Lady—"Well, I hope Peter's nephew is cleaner than Peter is."

Boatman—"He is! Ma'am," he's younger."—Punch.

First Semi-Annual Sale

of

Kings County Poland China Breeders Association

will be held at

The Fair Grounds, Hanford, Calif.

Saturday, Feb. 5th, 1916

On this date there will be one hundred and fifty head of Registered Poland Chinas sold, consisting of

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and a number of
High Class Boars

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Poultry for Profit



THE IDEAL HEN

By T. J. Patterson, Missouri Poultry Experiment Station, Mountain Grove



IN order to succeed in breeding any animal it is necessary for the breeder to have an ideal and his efforts must be for the production of that ideal. Different breeders have different ideals. One man strives to produce the high scoring prize winning hen, paying little or no attention to egg production, while another tries to produce the high laying hen and ignores fancy or show qualities. All will agree however that the highest ideal is the hen which scores high, lays a great many eggs, and lives a long time.

Of the many lessons learned in the egg laying contests one which stands out most prominently is that color has nothing to do with egg production and that high scoring birds are often high producers.

In order to get an idea of the standing in the show room of the exhibitors who have had high producing hens in the contest at Mountain Grove, a letter was sent to each contestant who has had hens in the contests which produced 200 eggs or over.

Sixty contestants were heard from, giving the prize winning records while their hens were making the high record at Mountain Grove. One thousand eight hundred twenty-three prizes were won by these contestants which were as follows: 653 firsts, 477 seconds, 243 thirds, 198 fourths, 92 fifths, 142 specials, 18 sweepstakes.

Eight contestants had not entered any shows, therefore had won no prizes.

Many of the hens which won in the egg laying contest won prizes before and after the contest. These prizes were won in San Francisco, New York and Chicago shows, ten state shows, eighteen state fairs and many district, county and local poultry shows. This would indicate that many breeders are reaching the high ideal.

These records together with observations made during the contests indicate that color of bird, color of eye, kind of comb, etc., have nothing whatever to do with egg production, and that the fine show bird which scores high is just as sure to be a good egg producer as the low scoring bird, and as the bird which scores high usually carries herself as if she thought "life is worth living". She has high vitality which indicates long life.

Summarizing the fancy and utility question, we find some contestants who win in egg production, but not in the show room. Others win in the show room, but not in egg production, while others win in both shows and egg production. This leads us to believe that it is possible to go to either extreme by breeding or to combine the two.

The man who has never had his birds in a show has no right to claim they are high scoring birds, and the man who has never tested his birds for egg production should not boast of high producers, but the man who can win in both deserves the highest honors.

NATIONAL EGG LAYING CONTEST

Mr. C. T. Patterson, in charge of the fifth annual National Egg Laying Contest conducted by the Missouri state experiment station at Mountain Grove, writes:

The fifth National Egg Laying Contest is starting off nicely. Fifty-one and two-fifths per cent of the birds score above 90, this being the score required by the American Poultry Association to win a first prize. Therefore 51 2-5 per cent of the 530 are eligible to win first prize by the American Standard of Perfection.

SOME ESSENTIALS OF STARTING A POULTRY FARM

By James Hadlington in Agricultural Gazette of New South Wales

Many people with a small amount of capital, who are anxious to get on the land, are turning their attention to poultry keeping as an available means to that end. A small area of land, a little capital—with a good stock of common sense and plenty of grit—are the first essentials. Next to these is a definite system and plan of operation based upon methods that have been found successful. In other words beginners are advised rather to follow proven practical methods than to go in for experimenting and what generally comes under the category of "ideas of their own." By all means let us have progressive methods, for which there is plenty of room, but these ideas of one's own, not based upon experience, are often fatal to success. Ideas conceived in faddism, pursued in blissful ignorance, generally end in dismal failure. Such, then, should act as a warning to the inexperienced when starting poultry farming with the idea of making a living. **One Way to Start**

Undoubtedly the best way to commence poultry farming, when experience has to be gained, is to start at the bottom—that is to say, start with a few breeding pens of well bred stock and give the first year to hatching a stock of breeders for the following season. In this way much experience will have been gained before spreading out into larger numbers, and no net profits should be expected while breeding up. Profits on the running can only be calculated upon a stock taking basis, and this should form one of the first entries in the farm books. The stock purchased and the buildings and equipment installed should be all set out in books kept for the purpose, the one under the heading of "stock", and the other as "plant". Stock taking at a given date should be a feature each year, and all new plant should be set down at cost price, and each succeeding year a percentage of depreciation struck off according to the estimated life of the construction. The stock should be set out at sound commercial values, and then by keeping strict account of income and expenditure the accumulated values or profits, as the case may be, can be determined.

HOW TO CATCH A HEN

The problem of how to catch a hen has at last been solved by the University of California. "It is as a rule very difficult," writes Professor Dougherty and his collaborator, W. E. Lloyd, "to get close enough to a fowl, especially one of the more active and nervous breeds, to pick her up with one's hands. It generally happens that when one really wants to catch a certain fowl she simply won't let one get within arm's length. With the catching hook one can slip up close enough with much less wear and tear on both attendant and fowl." He declares that where used with normal care not to close the hook too tightly nor to jerk the fowl too suddenly, such a catching hook is almost indispensable in a poultry yard and particularly valuable for removing promptly from a pen any sick fowl which might soon spread disease through the flock.

"Animal food, ground food and a generous supply of green stuff produces the best results for laying fowls," says J. G. Halpin, head of the poultry department of the University of Wisconsin.

An experienced poultryman says that when his hens and chickens have had access to charcoal he has never had a case of bowel trouble in his flock.

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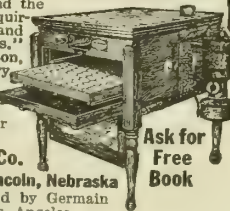
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Carlsbad Irrigated Farm Land—Bordering ocean; on state paved highway and Santa Fe Ry.; 80 miles south of Los Angeles; government records show Carlsbad warmest in winter, coolest in summer of any spot in Cal.; deep sandy loam model water system; low rates; lemons mature in summer when price is highest; immense profits in fruits and berries adaptable to coast territory; winter vegetables without competition; minimum temperature 1914 was 41 degrees; tomatoes, chili, peas, beans, eggplant, rhubarb, etc., bring \$150 to \$400 per acre; easy purchase terms. South Coast Land Co., G. Buxton, Sales Agt., Carlsbad, Cal.

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VICTORIA, AUSTRALIA, offers special inducements. Government land, water, railways, free schools, 3 1/2 years to pay for farms adapted to alfalfa, corn, sugar beets, fruit, etc. Climate like California. Ample markets. Reduced passages for approved settlers. Free particulars from F. T. A. Fricke, Government Representative from Victoria, 687 Market St., San Francisco, Cal., Box X.

Adjoining the town of Concord and our farm are small tracts, just the thing for poultry, fruit and berries, which can be sold on rental terms, and we will assist buyers in many ways to get started in the poultry business. VALLEY POULTRY FARMS, Box 188, CONCORD, CAL.

Ten Acres Navelis, 15 years old, 108 trees per acre. Water interest in well, cost about \$9 per acre. Concrete pipe line with standards. Early fruit. No smudging. Trees in good condition. Price \$6500. No trade. Address P. O. Box 806, Los Angeles, Cal.

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San Joaquin County Land For Sale—40 acres deep silt loam; best walnut, fruit and vegetable land in the county; \$200 per acre; terms; close to railroad. B. F. Goode, San Joaquin Valley Bank Bldg., Stockton, Cal.

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Free Booklet. County Sectional Maps showing U. S. Land, \$2.50. Any Co. State Map, \$2.50, showing 600,000 acres SCHOOL land. Jos. Clark, Sacramento.

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"Indestructo" Mineral Rubber Roof Paint. Guaranteed 5 years. Special introductory price to ranchers 40c gallon. In 10-gal. lots \$3.50. House stains all colors, 5-gal. cans \$2.00, worth \$4.00. Interior Varnish \$3.50 value, while it lasts \$1.00 gal. Just received car high grade cylinder oils. Light, heavy and medium, 5-gal. cans \$2.00—in bbls. 33c gal. Prices f. o. b. Los Angeles, cash with order. TILTON LUBRICANTS CO., 1222 San Pedro St., Los Angeles.

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Dried Figs—Calimyrna seven cents; black 5 cents per lb. for 25 lbs. or more. Tribble Nurseries, Elk Grove, Cal.

WANTED

Wanted—We want every person using wood or coal as fuel to write us for our free descriptive matter on how to save from 20 to 40 per cent in cost of fuel. No obligation on your part. Address Box 133, Visalia, Cal.

Wanted—Water development, springs, tunnels, streams and ranch irrigation work. Prices reasonable. Address S. S. Lee, Lancaster, Cal.

Wanted—Work as foreman on ranch. Experienced in fruit and stock work; sober, American, small family. Address Box D, Cultivator office.

Wanted to hear from owner of Farm or Fruit Ranch for sale. O. O. Mattson, Minneapolis, Minn.

CATS

Royal Siamese Cats—Descendants from the Royal Cattery, Bangkok, Siam. Mrs. B. Hocking, Guasti, Cal. Winner of first prize male and female at Panama-Pacific International Exposition, San Francisco, 1915.

LIVE STOCK

Big Type Poland Chinas—December and January are the best months to breed sows for spring litters. Don't you need a better boar—one that will sire pigs that will grow faster and larger and get ready for market quicker on the same or less feed? You can't make any money at the present market price unless you raise good ones. Scrubby scrubs never pay. One of my May boars, sired by IOWA WONDER, will pay you well. Price \$20.00 each. They will not last long at that price; better hurry. Bred sows, bred gilts, open gilts. One to a carload. 600 head to select from. Satisfaction or money back. Registered and transferred free. Geo. A. Smith, Corcoran, Cal.

Billiken Herd of O. I. C. Swine—The big white kind. Early maturing, weight carrying; everything immunized against cholera by the simultaneous treatment. Pigs of both sexes from March, April, May and June farrows. Sires Chief Again, Iowa Boy, Missouri Lad and Woodview Earl. Dams are all of the big, smooth-type and very prolific. A few bred sows about ready for their second and third litters. Write for prices and catalogue. C. B. Cunningham, Mills, Sacramento County, Cal.

Rancho Rubius Herd Durocs won first under six months; Junior Champion; Reserve Grand Champion; Champion Sow bred by exhibitor, second sow under two years, and other premiums at P. P. I. E. A few bred gilts and service boars for sale. Place your orders now for weanling pigs. Elmer Lamb, Ceres, Cal.

Young Pure Bred Holstein Bulls for sale, sired by Prince Beauty Pierteje Segis. Some of these are 10 months old, others are calves 3 and 4 months old. All grand individuals and out of good ancestors. Prices reasonable. Write for breeding and prices. Laguna Stock and Dairy Farm, E. R. Putz, Prop., Laton, Cal.

Del Dayo Farm (Old Haggin Bottom Ranch) Registered Berkshires, both sexes and from weanlings to one year old. Now ready a few choice Gilts safe in pig and some very choice 10 mos. old Boars and every sale absolutely guaranteed satisfaction. Stephen S. Day, Sacramento, Cal.

Grape Wild Farm Thoroughbreds—Guernsey Bulls of A. R. Breeding, BERKSHIRE HOGS. Finest herd in the state. All ages for sale. A. B. Humphrey, proprietor, Mayhews, Sacramento Co., California.

For Sale, Bull—Name: Fancy Sir Raleigh, No. 127819, 15 months old. Sire: Nancy's Raleigh—H. R., No. 101312; bred at Good Hold Farm, Mentor, Ohio. Dam: Brutus' Fancy, No. 293925, forty-pound cow. Price \$75. W. J. Cole, R. 1, Anaheim, Cal.

Blue Ribbon Herd Duroc-Jersey Hogs, service Boars and Bred Gilts a specialty; also boar and two sows, not related. Meet me in S. F. 1915, prices. John P. Daggs, Modesto, California.

Sturdy Young Pigs from thoroughbred registered prize winning Berkshires, purchased at State Fair 1914; prices reasonable. Write for circular. R. & L. Ranch, Lancaster, Cal.

Fancy Belted Pure Bred Belted Hampshire Boars and Sows. Good, sound young breeding stock; registered. Write for prices. Ben F. Thorpe, Mgr., C. A. Canfield Ranches, Bonsall, Cal.

For Sale—Pure bred Mammoth Jacks. The kind with plenty of bone. Prices right and satisfaction guaranteed. Will trade for young stock. J. E. Dickinson, Fresno, Cal.

Duroc Jersey Hogs—Young stock for sale. Immediate delivery. Get my prices. R. F. McDowell, Buena Park, Cal.

For Sale—Thoroughbred Duroc-Jersey Sows and Gilts, at reasonable prices. Healthy, first class stock. F. T. Harris, El Centro, Cal.

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Berkshires—Pedigreed Boars ready for service. Bred sows, weanling pigs, both grade and thoroughbred finest stock. C. H. Thompson, Navato, Cal.

Calves Raised Without Milk—Cost less than half as much as the milk raised calves. Write for free book to Coulson Co., Petaluma, Calif.

Registered Thoroughbred Berkshires of all ages; Cholera Immune; large boned. Ricconi Bros., Mountain View, Cal.

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Duroc-Jersey Boars, ready for service, low price. Sired by 800-pound boar. Ed E. Johnson, Turlock, Cal.

Durocs, Weanlings, Gilts, service boars, bred gilts and a few bred sows. E. F. Curtis, Napa, Cal.

Poland Chinas—Young Stock; either sex. Write for pedigree. Reasonable prices. Edwd. A. Hall, Watsonville, Cal.

Poland China Brood Sows and young pigs. D. M. Clark, Arlington, Cal.

N. H. Locke Co., Lockeford, Cal.—Choice young Jersey bulls for sale.

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Catalogues for the seed and nursery trade. The live stock and poultry industries are a specialty with us. Two thousand illustrations to select from. Write for prices and samples. The Kruckeberg Press, 237 Franklin St., Los Angeles.

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Altho Mahajo Brown Leghorns hatched late, managed to win 4th Cockerel (2 entries), 5th Pullet (3 entries), 4th Pen (1 entry), at Panama-Pacific Poultry Show—160 birds from six states competing. Incubator chicks from range flock (pullet bred), \$20.00 per hundred, hatching eggs \$10.00 per hundred, \$2.00 per setting of 15. Cockerels and pullets from \$5.00 each and upward. Hatching eggs from birds mated for exhibition type \$5.00 per setting. Please specify whether cockerel or pullet matings are wanted.

MAHAJO FARM,

P. O. Box 597, Sacramento, Cal.
"We'll play fair."—You can have our catalogue.

Baby Chicks from my thoroughbred flock of S. C. White Leghorns, carefully selected for laying and standard qualities, \$9.00 per 100, \$85 per 1000. Hatch eggs \$5.00 per 100, \$45.00 per 1000. I have 1400 laying hens and sell between 20,000 and 25,000 Baby Chicks every season. All orders receive my personal, most careful attention. Only eggs from my own flock and from hens that are two and three years old used in my incubators. Correspondence solicited. J. R. HEINRICH, Poultry Yards, Arroyo Grande, Cal., San Luis Obispo County.

All Aboard for the new year's chicks. Book your orders now for White Leghorns, R. I. Reds, Black Minorcas. Our stock is good; we get the eggs, and know how to hatch them right. With our large capacity can fill orders promptly and will quote you a delivered price that will please you. Write for circular. Kooften Poultry Ranch & Hatchery, Campbell, Cal.

Make Big Money with our White Orpingtons. Best breed for every need. Lay most when prices are highest; make finest eating; return greatest profit. 1000 grand range-raised birds, trap-nested and bred for heavy laying. Eggs, chicks, stock. Prices reasonable. Catalog free. Whitten Ranch, R. D. 5, Box 648, Los Angeles.

MacFarlane Strain White Leghorn Eggs \$1.50 per 15, \$2.50 per 30, \$5.00 per 100. Chicks Dec., Jan., Feb. 12c each, after-ward 10c. Order now, any quantity. Cockerels \$2.50. Big event, lowest prices, stock better than ever. Catalog free. Correspondence solicited. Newton Poultry Farm, Dept. 3, Los Gatos, Cal.

Baby Chicks—From good stock and hatched right. Our chicks arrive in first-class shape and grow quickly. Rhode Island Reds, Barred Rocks, Black Minorcas, White and Brown Leghorns. Write for circular. Orders booked now for delivery any time to suit you. Campbell Poultry Ranch, Campbell, Cal.

Penn's Quality Barred Plymouth Rocks. At the World's Poultry Exhibition, San Francisco, our WESTERN BRED Rocks ranked among the best in the WORLD, both in UTILITY and EXHIBITION points. Catalogue free. GOLDEN RULE POULTRY FARM, St. Helena, Cal.

Brown Leghorn, White Leghorn day-old chicks that are well-hatched and strong from healthy, vigorous breeders. SAN JOSE HATCHERY, 371 Meridian Road, San Jose, Cal. "Chicks well hatched are half raised."

Baby Chicks—Settings, 100's, 1000's. Rhode Island Reds, White Leghorns. Reasonable prices. Our own heavy layers. Hatched right in finest hatchery in the world at Pebbleside Poultry Farm, Sunnyvale, Cal.

Poultry Wanted—We pay the highest market price for all the local poultry we can get, no matter how large the quantity; also fresh ranch eggs. We remit immediately. National Poultry Co., 607 E. Third St., Los Angeles, Cal.

S. C. Rhode Island Reds, Lester Tompkins and Winslow strains eggs for hatching. Day old chicks. Prices on application. Rainescourt Poultry Ranch, Zelzah, Calif.

Petaluma Hatchery—Capacity 16,000 chicks a week. Five varieties. Can ship to points reached in three days. We challenge the hen. Send for circular. L. W. Clark, Petaluma, Cal.

Incubators at Manufacturers' Prices—To assist the poultry industry, we are making this concession. Write the GEO. H. CROLEY CO., INC., 631-637 Brannan St., San Francisco, for particulars.

Barred Rock Cockerels, \$2.50 each. Am now booking orders for Rhode Island Red and Barred Rock Chicks for Feb. delivery, 15c each. G. L. Hawley, Madera, Cal.

S. C. White Leghorns—Hoganized; bred to lay. Booking orders now for hatchery eggs. \$6 per 100; \$50 per 1000. R. H. Dickinson, Pine Tree Poultry Farm, R. F. D., Los Gatos, Cal.

White Plumage Poultry Farm and Hatchery sells White Leghorn baby chicks, full of vigor and healthy, from our own stock. Circular tells it all. Exeter, Cal.

S. C. W. Leghorn Cockerels, pairs and trios; also booking orders for DAY OLD CHICKS; all from the highest utility fowl. Jos. E. Blackshaw, San Jacinto, Cal.

First Class Chix—White, Brown Leghorns, R. I. Reds, B. P. Rocks, Buff Orpingtons for September and later. Stock guaranteed. Hawkeve Hatchery, Turlock, Cal.

Golden Buff Leghorn Baby Chicks—Most handsome and best of all Leghorns. Order early. Sandridge Hatchery, Kerman, Cal.

White Minorca—Most popular all purpose breed. Choice baby chicks for early customers. Sandridge Hatchery, Kerman, Cal.

Day-old Chicks—Barred Rocks, R. I. Reds, Lt. Brahmas, Buff and White Orpingtons, also breeding cockerels. Enoch Crews, Santa Cruz, Cal.

For Sale—Beautiful Silver, Golden and ring-neck pheasants. Hundreds of them. Mary Rahman, Santa Ana, Cal.

POULTRY

Dark Brahma Chickens—Hatching eggs for sale. Received first prize pen P. P. I. E. Poultry Show. Write for prices and breeding particulars. Have white and colored Muscovy Ducks. Cottage Home Farm, Frank Griffith, V. S., Mod., Hanford, Cal.

Baby Chicks—White Leghorns, Brown Leghorns, Barred Rocks, R. I. Reds, Black Minorcas and Anconas. Prices on application. All hatched in our new Mammoth Hatchery, Orland Hatchery, Orland, Glenn Co., Cal.

Rhode Island White Cockerels—Choice cockerels of this fine new strain of all purpose fowls, either rose or single comb, all fancy stock. Price \$5.00 each. Address S. Fairburn, Burbank, Cal.

Baby Chicks—R. I. Reds, pure bred unlimited range stock, \$14.00 hundred. Full count live chicks guaranteed. Leonard B. Ryan, El Cajon, Cal.

NEES

Reliable Home Grown Fruit Trees—All leading varieties, including 20,000 Royal Apricots, 30,000 Phillips and Tuscan Cling Peaches, 15,000 Bartlett Pears. Also full line of ornamentals. All stock is well rooted, first class and true to name. Send us your list of wants for lowest quotations. Orange County Nursery & Land Co., Fullerton, Cal. Sales yard on State Highway opposite Anaheim Sugar Factory.

Walnut Trees—Late blight resisting varieties grafted and budded on California Black and on FIRST GENERATION Royal and Paradox Hybrid roots, which are as much superior to the California Black root, as the California Black root is to the English root—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placencia. Dr. W. W. Fitzgerald, Elks' Building, Stockton, Cal.

Tribble Nurseries, Elk Grove, Cal.—Grafted walnuts and grafted paper-shell pecans. Exclusive propagators of Tribble Mayette, Kerr Parisienne, Gladly and Improved Franquette. 19 other walnut varieties. Fine stock of almonds, prunes, Bartlett pear, on resistant roots and other fruit trees and plants. New list ready.

For Sale and Exchange—765 walnuts, Placencia Perfection on black roots, 40 cents each; 2500 Mission olives, 9 cents each; San Bernardino County delivery. Will exchange Valencia, lemons, or equities that carry themselves, or for clear vacant land. O. E. Van Slyke, Azusa, Cal., or 916 Story Bldg., Los Angeles.

Citrus Trees—All Varieties. Washington Navelis, Valencia, Eureka, Villa Franca and Lisbon Lemons. Exceptionally fine lot of Marsh Seedless Grape Fruit Trees. Carefully selected buds from vigorous young groves budded on sour stock. Prices and trees are right for the buyer. John Shingler, Upland, Cal. Correspondence solicited.

For Sale—Grafted Walnuts, soft and black root; apricots, oranges, lemons and all leading varieties of tree stock, grapes, roses, ornamentals. Get my prices. A. R. Marshall's Nurseries, Cor. 3rd and Bush Sts., Santa Ana, Cal. Phone Pacific 1054-R.

Chase Walnut Trees, grafted on black walnut root. First-class stock. They will make you money. Write for circular and price. Also seedling trees grown from the original CHASE tree. Magnolia Nursery, Whittier, Cal.

Olives Are Our Specialty—Our stock is home grown and carefully selected from the best strains of Missions and Early Manzanillos. Every tree guaranteed. Get our prices. H. Detmers & Son, Exeter, Cal.

Eureka Walnuts Are the Best—Grafted on native black roots. Our prices will surprise you. Write today—tomorrow never comes. Geyer Bros.' Walnut Nursery, 214 S. Alhambra St., Alhambra, Cal.

For Sale—First class, two-year-old olive trees, Mission and Manzanillo, 4 to 8 feet; clean, also several thousand rooted grape vines. Pierce, Isabella or California Concord. Address Box 673, Barbour Ranch, San Gabriel, Cal.

Apricots, Sugar Prunes and Olives—All first class stock. Royal, Blenheim and Tilton Apricots, Mission, Manzanillo and Ascolano Olives. Correspondence invited. C. E. Moyer, Hemet, Cal.

Walnut Trees—Eureka and El Monte varieties a specialty; also Franquette and Placencia. Write for prices and description of stock. Personal inspection invited. Eureka Walnut Nursery, Montebello, Cal.

For Acacias, Avocados, Budded Loquats, Citrus trees, Evergreens, Feijoas, Palms, Roses and all kinds of trees, shrubs, vines, etc. Write for our new catalogue. Robertson Nurseries, Fullerton, Cal.

Wanted—Sour Orange Seedlings, 10,000 to 20,000. Send sizes and prices, also want prices on Avocados and Feijoas per 100. Mission Nursery, Mission, Texas.

Peach, Plum and Apricots, fine, thrifty trees; none better; low prices. Write Dr. F. M. Jenkins, 1498 Arrowhead Ave., San Bernardino, Cal.

Eureka and Placencia Perfection Walnut Trees grafted on black root. Fine trees from first class stock. Jos. P. Thompson, Santa Ana, Cal.

Budded Avocados—Field grown; all varieties. Write for prices. Newberry-Sherlock, R. D. No. 2, Pasadena, Cal.

Citrus Nurseries, Murphy Oil Company, East Whittier, California. Selected stock for sale; inspection invited.

For Sale—Several thousand pedigreed 1 year old Lisbon lemon trees. Address Chas. Story, Rivera, Cal.

For Sale—Mariana plum cuttings and rooted stock; the root for loams and heavy soils. P. H. Ronse, Bangor, Cal.

Eureka Walnut Buds For Sale—Enter your order now for early delivery. E. Holve, Fullerton, Cal. Phone 214-W.

Nurserymen—Pot grown conifers, palms, shrubs and ferns for lining out or potting. Ballou's Nursery, Pasadena, Cal.

Prune Trees 12c, Walnuts 30c. Cash Nursery, Sebastopol, Cal.

DUCKS

Caldwell's White Muscovy Ducks, cash prize winners P. P. I. E. Exp. Stock and eggs. Caldwell Bros., Los Angeles, Cal.



San Francisco-Los Angeles Produce Markets



Los Angeles Markets

LOS ANGELES, Dec. 29, 1915.

The prices given below, except where otherwise noted, are those made by wholesale or commission houses to retailers, and are intended to give producers the range of the market rather than an indication of prices which they will secure. Jobbers' quotations to producers are not given, except where noted.

BUTTER

Prices to trade 3 cents above following quotations:
Creamery Extras29
Firsts27

CHEESE

Prices to trade, 1 to 2 cents higher:
Arizona Daisies15
Arizona Longhorn17@17½
California Fresh17
Eastern Cheddar20@21
Domestic Swiss23
Eastern Daisy21
Eastern Twins18½
Imported Swiss40
Longhorn19½
Oregon Triplets18@18½
Tillamook19@19½

EGGS AND POULTRY

Prices to trade 3 cents higher than following quotations:

Fresh Ranch, case counts36
Candied38@40
Northern Fresh Extras, f.o.b. S. F.36½
Prices to producers:
Hens, lb.15@17
Roosters, old9
Broilers, lb.25
Fryers18
Roasters, lb.14
Turkeys16@19
Ducks15
Geese12
Squabs, doz.1.00

LIVE STOCK

The following quotations are f. o. b. Los Angeles on all stock:

MACHINERY

USED RANCH MACHINERY
USED WINDMILLS GUARANTEED
8, 10, 12, 16-ft. Aeromotors, Fairbanks
NEW & USED TANKS, GALV. WOOD.
1000 gal. galv., \$19.50; 2000, \$29.50. Also
all sizes in new and used wood tanks.
GAS ENGINES & PUMPS—ALL KINDS
ABSOLUTELY GUARANTEED.

Few snags which may all be seen in
our yard or purchaser's name who
bought them: 1 H. Upright, 1½ H. Fair-
banks, 2 H. Fairbanks, 2 H. Victor, 2 H.
Lambert, 3, 4½, 6 Fairbanks, 6 Stearns,
5, 10, 12, 18, 34 H. Lamberts, 11 White
Middleton, 12 Stearns, 12 H. Lambert and
Ames with any size pipe and cylinder
complete \$215, or engine alone \$125; 18
Lambert and No. 5 centrifugal pump
complete \$195.

NEW & USED RANCH TOOLS
New 8-in. steel beam plows \$5.50; 10-
in., \$6.50; 2-horse spike harrows \$5 to
\$11.90; single riding 14-in. plow with new
shear \$24; 4 and 6 gang Stocktons with
new shears \$17.50; 4 gang 24-in. disc
plow, cost \$120, for \$48, fine for small
tractors; 5 set double harness, broad-
cast seeders, rollers, graders, cultivators,
mowers, rakes, headers, threshers,
balers, boilers, steam engine and com-
pressor, horse power gear \$15; 5-ton
Buffalo wagon scales \$45; rotato cutters
and diggers, hay stacker, 6 disc Benecian
tractor plow \$125; Buck rake, spray
pumps, 1½-ton Knox auto truck, Weber
wagon, \$33; Sundries.

Being PIONEERS in these lines with
a complete machine shop to repair our
machinery enables us to sell all of the
above at 10 per cent less than those
with little experience and no shop.
BEWARE of misrepresentations as we
have no branch yards. There is only
one DEMMITT CO., office 120 N. Main,
Upstairs. YARDS 316 YALE ST., Los
Angeles.

For Sale—Pumping plants, 10 H. P. en-
gine with magneto, No. 2 Ames head,
80 ft. 6 in. pipe and rods, 5 in. cylinder
and belting complete, \$235.00; 18 H. P.
engine with magneto and No. 5 Vertical
Krogh pump, \$225.00; 10 H. P. engine
and No. 3 Vertical Krogh pump, \$175.00.
Ranchers Exchange, 1630 So. Main St.,
Los Angeles, Cal.

For Sale—Used and new Gas Engines, 2
H. P. up, rebuilt and fitted with modern
equipment. 22 years' experience enables
us to repair and rebuild Gas Engines cor-
rectly. Get prices, Lloyd, 806-808 N. Main
St. Los Angeles. F7020—Broadway 4103.

For Sale—Used windmills, gas engines,
pumps, pipe plows, discs harrows,
mowers, rakes, 16 ft. Aeromotor, \$85.00;
5000-gal. Redwood tank, \$35.00; 1 H. P.
motor, \$25.00; 4-in. surface pipe, 6½ in.
Ranchers' Exchange, 1630 So. Main St.,
Los Angeles Cal.

For Sale—Spalding deep tilling machine,
nearly new. Will plow and pulverize the
ground up to twenty inches deep. H. J.
Christiansen, Box 15, Solvang, Cal.

RABBITS

Richey's New Zealand Red Rabbits won
1st, 2nd, 3d at Panama Exposition.
Richey Red 1st Junior buck won Prather
trophy for best N. Z. buck, also 2 medals
at Riverside, registered \$26, weighs 9½
lbs., service \$2.50. Barred Rock Cocker-
els from blue ribbon winners. Eggs in
season \$1.50 per 15. Send 25c for book-
let—Making a Living on an Acre and
Care of Rabbits by Mrs. Richey, R. 8,
Box 557, Los Angeles, Cal.

Caldwell's Royal Red New Zealand
sired and sold on merit Catalog free
Caldwell Bros., Box 613R, Los Angeles.

Hogs, 175 to 200 lbs., per cwt.6.25
Prime Steers7¼@7½
Heifers6¼@6½
Calves, lb.9@9½
Sheep—
Ewes, head4.50
Wethers5.00
Lambs, head5.00@5.25

POTATOES

Wholesale selling prices:
Sweets, yellow, lug.75
Rurals1.30@1.35
Idaho Russets1.65@1.70
Lompoc1.85
Northern Burbanks1.55@1.70
Seed Potatoes:
Early Rose2.15@2.25
White Rose1.75@1.80
American Wonder2.00@2.10

ONIONS

Wholesale selling price:
White Globe, cwt.1.90@2.00
Oregon Globes, cwt.2.00
Garlic15
Sets—
White, lb.12
Yellow, lb.9

VEGETABLES

Wholesale selling price:
Artichokes, Northern, doz.1.25@1.35
Beets, doz.35
Beans—
Wax10@12
Limas8@9
Green10@12
Brussels Sprouts, lb.9@10
Cabbage, sack1.15
Northern, lb.2
Carrots, doz.30
Cauliflower, doz.40@50
Celery, doz.75
Chicory, doz.40
Chives, doz.1.00
Cucumbers, Hothouse, doz.50@1.75
Egg Plant, lb.7@8

SEEDS AND PLANTS

Sudan Seed—Pure, recleaned, clear of
Johnson grass, 15c per pound; in lots
of 100 pounds or more 10c per pound;
money to accompany orders. Book of
instructions furnished with each order.
F. M. Grundy, Lubbock, Texas.

Alfalfa Seed—New crop. You want the
best. We grow it. We sell it. You
buy it. Write or wire for quotations,
samples and information. V. A. PETER-
SON ALFALFA SEED COMPANY,
ARBUCKLE, CAL.

Buy Pure California Desert Grown
Sudan Grass Seed (and avoid South-
ern states Johnson grass). Send \$1.00
for sample 3-lb. package, postpaid. Special
price on larger quantities. R. & L.
Ranch, Lancaster, Cal.

Burbank Spineless Cactus—Hardest vari-
eties, "Melrose" and "Special." Strong,
matured slabs, \$8.50 per 100; \$50 per
1,000. Labranza Ranch, Athlone, Merced
Co., Cal.

Sudan Grass, local grown without irriga-
tion. Seed for sale in small quantities
at 30c per lb. delivered in California.
Write for quantity prices. Z. M. Dickey,
Dinuba, Cal.

Thoroughbred Strawberry Plants—Early
Ozark, Gold Dollars, Wm. Belt, Good-
ells, Kellogg Prize, Marshalls, Magoons.
\$2.50 per thousand. Mr. John Christian-
sen, R. F. D. 2, Canby, Oregon.

Rhubarb Plants—We have some choice
plants to offer in large or small lots.
Get our prices. Currier Bulb Co., Sea-
bright, Cal.

Oregon Evergreen Seed Corn and bar-
ley hay for sale. Address C. E. Peu-
kert, R. F. D. 12, Box 436, Los Angeles,
Cal.

White Rose Seed Potatoes for early
planting, \$1.50 per hundred lbs. Theo-
dore Silver, Box 64, El Monte, Cal.

TURKEYS

Turkeys—Bourbon Red, White Holland,
Mammoth Black. Also White African
Guineas and White Houdans. Mrs. B.
Hocking, Guasti, Cal. Winner of 7 first
prizes and 3 second at Panama-Pacific
International Exposition, San Francisco,
1915.

For Sale—Bourbon Red turkeys and eggs
for hatching. My birds won all the
honors in the Alameda County Poultry
Exhibition in Oakland 1-14 and just as
fine this year. A. E. Balmer, Alhambra
Valley, Martinez, Cal.

Mammoth Bronze Turkeys—THE BEST
IN THE WEST. Extra special prices.
Further information cheerfully given.
Write now to secure best birds. Geo. A.
Smith, Corcoran, Cal.

Giant Bronze Turkeys from choicest
prize winning stock; quality unex-
celled. Special price on young hens per
half dozen. Mrs. Nellie Hart, Holtville,
Cal.

**Mammoth Bronze Turkeys—Prize win-
ning stock.** P. P. I. E. Mrs. H. B.
Kimball, Farmington, Cal.

DIVIDEND NOTICE

The German Saving and Loan Society
(The German Bank)

526 California St., San Francisco

For the half year ending December
31, 1915, a dividend has been declared
at the rate of four (4) per cent per
annum on all deposits, payable on and
after Monday, January 3, 1916. Divi-
dends not called for are added to the
deposit account and earn dividends
from January 1, 1916.

GEORGE TOURNY, Manager.

Escarole, doz.90
Horseradish, lb.10@11
Lettuce, doz.40
Mint, doz.30
Onions, Green, doz.20
Oyster Plant, doz.40
Parsnips, doz.35
Peas10@15
Peppers—
Bells6@7
Chili, lb.6@7
Pimientos, lb.6
Rhubarb1.10
Spinach, doz.20
Squash—
Crookneck, lug.60
Hubbard, lb.1¼@1½
Small Cream45
Summer, lug.1.00
Tomatoes, lug.1.00@1.10

FRESH FRUIT

Wholesale selling price:
Apples—
Bellflower1.10@1.25
Jonathans1.70@1.90
King David1.50@1.65
Pears, White1.20@1.35
Yellow Newtown Pippins1.20@1.25
Bananas, lb.4
Berries—
Strawberries, basket14@15
Blackberries, basket14@15
Raspberries, basket15@16
Casabas, half crates3.50
Cranberries, bbl.12.50
Figs—
Bik box1.10@1.25
White85@90
Grapes—
Malagas, lug.1.35
Cornichon, lug.1.75
Red Emperor, lug.1.75
Pears, Bartlett, lb.9
Winter Nelis, lug.1.50
Persimmons, lb.6@7
Pineapples, lb.6@7
Pomegranates, half orange box1.75

CITRUS FRUIT

Wholesale selling price:
Lemons2.00@2.50
Juice Lemons1.25
Grapefruit, Seedless4.50@5.00
New2.75
Limes, basket1.00
New Navels2.50
Tangerines, half box1.50
Valencias4.00@5.00

DRIED FRUITS

Wholesale prices to retailers are:
Evaporated Apples, Fancy, boxes 8½ @ 9¼
Apricots10½@11¼
Peaches6@7½
Pears11
Prunes, fancy pack5½@13

NUTS

	1914	1915
Walnuts—		
No. 1	16.50	14.00
No. 2	12.00	10.60
Buds	20.00	17.50
Jumbos	18.50	16.60

See almond quotations by Association
under San Francisco.
Peanuts—
California, Raw5@6
Japan6
Eastern6¼@7
Chinese5
Pecans17

HONEY

Wholesale selling price:
Comb, Fancy Water White18
Extracted Water White7½
White6
Light Amber7
Beeswax25@26

BEANS

Wholesale selling price:
Limas5.40@5.50
Lady Washington7.00
Larks5.50
Black Eyes4.00
Lentils17.00@20.00
Extracted Water White7½@8
Small White6.75
Garbanzos5.75

HAY

Prices to producer f. o. b. Los Angeles:
Barley14.00@17.00
Wheat Hay12.00@16.00
Tame Oat16.00@20.00
Alfalfa12.50@15.00
Volunteer8.00@10.00
Straw6.00@7.00

GRAIN

Wholesale selling prices f. o. b. Los An-
geles:
Corn, Yellow2.05
Corn, White2.15
Wheat2.15
Oats, White1.75
Oats, Hulled2.25
Egyptian Corn1.85
Kaoliangs1.50
Barley Seed1.65
Barley, Hulled1.95
Kaffir1.75
Milo1.60
Rye2.00
Sunflower Seed6.00@6.10

FEED STUFF

Wholesale selling prices f. o. b. Los An-
geles:
Alfalfa Meal1.15
Bran, Heavy1.40
Shorts1.85
Alfalfa Molasses, per cwt.1.20
Beef Scraps3.05@3.15
Beet Pulp1.25
Molasses Beet Pulp1.20
Cracked Corn, cwt.2.10
Cracked Wheat, cwt.2.25

Cotton Seed Meal1.90
Bone, Green1.85@1.95
Meat Meal3.00@3.10
Charcoal1.90@2.00
Oil Cake Meal2.50
Fish Meal3.15@3.25
Rolled Barley1.60
Rolled Oats1.80
O. & W. Middlings1.75
Feed Meal2.15
Scratch Feed2.00@2.05
Oyster Shell1.10@1.25
Scratch Gritlets2.20@2.25
Best Chick Feed2.80@2.90
Poultry Mash, 90-lb. sk.1.90@2.00

San Francisco Markets

SAN FRANCISCO, Dec. 23, 1915.

The prices given below, except where
otherwise noted, are those made by
wholesale or commission houses to re-
tailers, and are intended to give pro-
ducers the range of the market rather
than an indication of prices which they
will secure. Jobbers' quotations to pro-
ducers are not given.

BUTTER

Prices to trade, 4 cents above following
quotations:
Fresh Extras26
Prime Firsts25
Firsts24

CHEESE

Wholesaler to retailer:
Young Americas16½
California Flats14½@15
New York Cheddar21
California Cheddar17½
Oregon Twins17
Oregon Young America, fancy16

EGGS AND POULTRY

Prices to trade 3 cents higher than
following quotations:

Price to producer:
Fresh Extras39
Firsts30
Select Pullets29
Hens, lb.14@17
Fryers19@21
Broilers23@27
Roosters—
Young18@19
Old10@11
Squabs2.50@3.00
Turkeys—
Live Young20@21
Live Old19@20
Ducks12@13
Geese, pair2.50@3.00
Belgian Hares—
Live8@9
Dressed10@11½

LIVE STOCK

San Francisco prices, gross weight:
Steers4@7
Cows and Heifers4½@6
Calves, lb., live wt.6@8¼
Hogs4@6¼
Wethers5@6¼
Ewes5@5½
Milk Lambs, lb.7¼@8

POTATOES

Wholesale selling price:
Salinas Burbanks, cwt.1.60@1.85
Delta Burbanks, cwt.1.00@1.45
Sweets1.35@1.50
Oregon1.25@1.50
Idaho Rural1.20@1.30
Idaho Russets1.25@1.60

ONIONS

Wholesale selling price:
Onions, cwt.75@1.00
Garlic, lb.10@12½

VEGETABLES

Wholesale selling price:
Artichokes, doz.50@1.00
Beans—
String, lb.9@12½
Limas, lb.5@7
Wax, lb.4@7
Brussels Sprouts, lb.3@4
Celery, crate2.25@2.50
Cucumbers, doz., hothouse75@1.00
Egg Plant, Southern, lb.3@7
Lettuce, small crate75@85
Peas, Southern8@12½
Peppers—
Chili, lb.1½@2½
Bell, box40@55
Rhubarb, box1.00@1.50
Squash—
Summer, lug75@85
Cream50@65
Hubbard, sack65@75
Winter50
Tomatoes, Southern, crate75@1.25

FRESH FRUIT

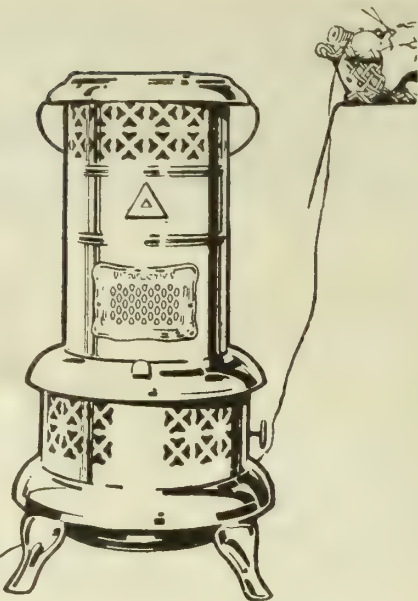
Wholesale selling price:
Apples—
Newtown Pippins75@1.25
Pears, White65@85
Bananas, Hawaiian, bunch1.00@1.75
Cranberries, Eastern, bl.1.00@1.25
Oregon, box3.50@3.75
Persimmons, box75@1.25
Pineapples, doz.1.25@2.00

CITRUS FRUIT

Wholesale selling price:
Grapefruit—Seedlings—New2.00@3.00
Lemons1.50@3.75
Lemonettes1.50@1.75
Limes, Mex., cs.5.50@6.50
Navels, new1.50@2.75
Tangerines, box1.50@2.00
Valencias2.25@4.50

Continued on Page 655

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for cold
and
dampness

Perfection Oil Heater

A sure remedy for the cold, damp days. Inexpensive to operate—easily carried from room to room. Smokeless and odorless. Dealers everywhere.

For best results use Pearl Oil

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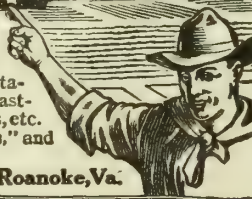
(California)
Los Angeles



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Beautiful Little Farms of 5 and 10 acres at RICHLAND HEIGHTS in Valley of Virginia. Fine fruit, vegetable, poultry and live stock country—farms \$250.00 and up, on long time and easy payments. You can be happy and independent here. Near railroad station and good markets with fast and cheap transportation to largest eastern markets. Abundant rainfall, excellent climate, schools, neighbors, etc.

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Easy fitting and
strong at every
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stop every drop
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The best and safest investment
contract on the market.

Investigation invited.
Representatives wanted for County
Agencies.

General Agent. 1014 First Savings
Bank Bldg., Oakland, Cal.

A JELLY FACE

"When mama asked if I'd been stealing jelly, I said yes." "Why didn't you deny it?" I didn't have the face to say no."—Boston Transcript.



The Household Department



THE MAN BEHIND THE PLOW

They sing about the glories of the man behind the gun,
And the books are full of stories of the wonders he has done;
There's something sort o' thrillin' in the flag that's wavin' high,
And it makes you want to holler when the boys go marchin' by;
But when the shoutin's over and the fightin's done, somehow
We find we're still dependin' on the man behind the plow.

In all the pomp and splendor of an army on parade,
And through the awful darkness that the smoke of battle's made;
In the halls where jewels glitter and shouting men debate;
In places where the rulers deal out their honors great,
There is not a single person who'd be doin' business now,
Or have medals, if it wasn't for the man behind the plow.

We're buildin' mighty cities and we're gainin' lofty heights;
We're winnin' lots of glory and we're settin' things to rights;
We're a-showin' all creation how the world's affairs should run;
Future men'll gaze in wonder at the things that we have done,
And they'll overlook the feller, just the same as they do now,
Who's the whole concern's foundation—that's the man behind the plow.

—S. E. Kiser.

THE MEAN MAN



ALEB Peaslee and Lysander Hyne sat comfortably upon the fence of Mr. Peaslee's "upper paster," absorbing the warm June sunshine. In the road below them a peddler's cart, drawn by an emaciated horse, creaked along. Caleb Peaslee regarded the horse pityingly.

"I don't believe," he observed slowly, "that I've seen a hoss run down quite as bad as that one since the time Needham Bonsey sold a hoss to Wilder Blake for two dollars. You never knew Needham Bonsey, Lysander—he died 'fore you ever moved here.

"There's varyin' degrees of snugness," said Mr. Peaslee, reflectively. "There's prudence and snug and stingy and downright p'sen mean. Bonsey was p'sen mean. When I tell you he never weighed within thutty pounds of what he ought to weigh, 'count of scantin' himself of victuals, you'll know that what critters he had in his barn didn't get fed very heavy. In time everything Bonsey owned in the way of animals got so thin you c'd scarcely see 'em edgeways.

"Bonsey had a hoss that he used to tote his truck to Bangor with—a pretty good hoss it was, too, in the beginnin'; but workin' all the time and eatin' 'bout the same as never, soon got him where he wa'n't much more'n jest the runnin' gear of a hoss.

"Bonsey was comin' back from Bangor one day, and had got jest about abreast of Wilder Blake's place, when all at once the hoss begun to weave from one side of the road to the other, 'sif he was dizzy, and down he went in Wilder's dooryard, flat on his side, with his eyes shut, and 'parently with no more life in him than there would be in a hemlock log!

"I was workin' for Wilder at the time, and we both come runnin' down where the hoss was; when we saw his eyes shut and how thin he was, we both made up our minds he was dead.

"There!" Bonsey whimpered. "There's two dollars gone! A man offered me two dollars for that hoss's hide today, and he tol' me the critter wouldn't live to git me home, but I didn't believe him. And now he's up and died on me, and it'll cost me more

two dollars to move him off out of here, and I shan't come out a cent ahead."

"While he was talkin', Wilder looked at Bonsey same's you would at a toad; fin'ly he up and spoke.

"Rather'n have a good, honest hoss, even if he is dead, b'long to you a minute longer," he says, "I'll give you the two dollars and take care of him. That hoss has earnt a decent burial, with his skin on him, and I'm goin' to see that he gets it. Now you get off'n my premises till I get kind of cooled off toward you, or I won't undertake to say what may happen."

"Bonsey grabbed the two dollars and started off up the road.

"Well," Wilder says, after Bonsey left, "I guess mebbe the hoss's as well off there as anywhere till after supper, and then you'n I'll make some d'sposal of him." So we left him layin' there in the shafts, with the harness on him, and went into the house.

"When we got through supper I started out a mite ahead of Wilder. When I got round the corner of the house, where I c'd see down into the front yard, I let out a hoot that fetched Wilder runnin'.

"Whether it was that the hoss'd got rested, or whether it was the smell of that sweet grass there in the yard that fetched him to, I don't know and never shall, but there he was on his feet and feedin'. After Wilder nau looked at him a minute, he broke out gigglin'.

"Jest for the notion of it, Caleb," said he, 's'posin' we don't tell Bonsey that he's sold me a live hoss for two dollars, 'stead of a dead one—jest let him think we hauled the hoss away 'fore he come back after his wagon. I got a kind of idea that I'd like to put that hoss down in my lower paster, where thee won't anybody see him; and mebbe I'll feed him a little grain fom time to time, and see what he looks like in a couple of montns. What say?"

"We took and led the hoss into the barn, and the next day Wilder led him down to the back paster, which was all shut in by trees, and turned him loose.

"When I saw that hoss agin, 'bout three weeks later, I almost wouldn't have known him. His head was up and his eye was bright, and he was kitin' round that paster like a colt. I asked Wilder what he was callin' to do with him, but he jest shook his head and grinned a little.

"You wait and see," he says. "I got a plan, mebbe."

"Well, meantime Bonsey'd been huntin' for another hoss to take the place of the one that died, as he s'posed. But hosses was high and Bonsey hated to pay out money wuss'n cuttin' off a finger, so he hadn't traded for one, and was hirin' folks to haul his stuff into Bangor for him, and grumblin' 'bout payin' for it.

"After it had run on that way for 'bout three months, Wilder hitched up the hoss one evenin' and drove down to the post office, where he knew he'd find Bonsey. Mebbe there was a dozen of us settin' out there, and Bonsey was among 'em. I see him eyin' the hoss kind of disbelievin' when Wilder halted him, and he half riz up and then settled back again, 'sif he couldn't credit his eye.

"Quite a hoss you've got there, Wilder," says Ben Gullison. "Something you've traded for lately?"

"Well," says Wilder, "it's one I bought 'bout three months ago, and 'tween you and me, I think he's wuth all I give for him, anyway. Pretty good hoss for two dollars, I call him."

"Bonsey come up on his feet with a jerk, and he fairly hollered, 'Wilder Blake! Is that my hoss you're drivin'?"

"No, sir!" Wilder says. "That ain't your hoss—that's a hoss I bought of you for two dollars, before a wit-ness!"

"He didn't say any more jest then,

but sot there lookin' pretty straight at Bonsey. Bonsey turned red at fust, and then white, but he never said a word.

"After a bit, Wilder says, slow and thoughtful, 'sif he was weighin' every word, 'Needham Bonsey, I'm goin' to do somethin' that mebbe you won't understand. I paid you two dollars for this hoss, and I've give him the run of my lower paster ever since, and fed him 'bout ten dollars' wuth of grain, and now I've got a hoss there that's wuth a hundred and twenty-five dollars of any man's money, and he stan's me, at the outside, not over twenty dollars. Now,' says he, 'I'll tell you what I'll do.

"I'll sell you that hoss," he says, 'for seventy-five dollars, and that's fifty dollars less'n you can buy one anywhere near as good. But you've got to sign an agreement to bring this hoss to me once a month—I'm a public weigher—and put him on my scales. If you ever bring him there and he weighs over fifty pounds less'n he does this minute, he ceases to be your property and becomes my hoss again, without my payin' you a single cent! There's the conditions. What've you got to say?"

"I s'pose some men would have had pride 'nough to refuse, but Bonsey was too fond of money for that. They made out the writings and he took the hoss and went away with it.

"And," concluded Mr. Peaslee, "you might not credit it, but from that time on I d'know's there was a better-kep hoss in this town than the one Needham Bonsey drove."—Youth's Companion.

ON THE TOILET TABLE

Written for California Cultivator
By M. A. H.

The dainty girl keeps all the articles on her toilet table shiningly clean and in perfect order, for no matter how expensive the articles may be they will not add to the appearance of the table unless they are kept bright and shining.

The backs of hair brushes should never be dampened and the best way to clean them is to wash the bristles in gasoline then moisten a little whitening with alcohol and clean the silver backs with this. The backs and handles of ebony brushes should be rubbed over with a very little boiled linseed oil after washing and then rubbed with a soft cloth until all of the oil is removed.

Brass ornaments can be kept shining by rubbing with a soft cloth dipped in ammonia, then rubbed over a piece of pumice soap and then over the brass and then with a piece of soft fannel.

Toilet powders and creams can easily be made at home. An excellent face cream is made by stirring a heaping teaspoon of boric acid powder in a teacup of melted mutton tallow and then stirring in a little spirits of camphor. This can be poured in a mould and every night this should be heated and a little of the cream rubbed well into the skin with the tips of the fingers. One of the best face powders is made from plain starch by pulverizing to the last degree of fineness and sifting through muslin, then adding an equal part of boric powder and a little perfume. This powder is especially good to use if there are pimples or any breaking out on the face. A little burnt alum added to this powder makes a fine powder to use for perspiration, but it is better to add more boric powder if it is to be used for this purpose, as it helps to remove the disagreeable odor. For perspiring feet use a little of the boric acid powder in the water each time the feet are bathed. Keep on your table a box of cornmeal and a cake of mutton tallow. Rub the hands with the cornmeal after washing and drying them, and when you notice that your hands are becoming sore, heat a little tallow and apply it while warm; then draw on a pair of old, loose kid gloves. The meal in the day time and the tallow at night will keep the hands soft and smooth and prevent chapping.

When blankets have become worn, their time of usefulness can be prolonged by washing them and placing between two layers of cretonne, thin quilting or tacking. The blanket thus becomes a pretty comfort and will well serve its purpose.

WHAT BECOMES OF THAT CENT?

Here is a puzzler presented by the Columbus Dispatch. See if you can work it out. If you can't watch for the solution on this page of next week's Cultivator.

A farmer comes to town with 30 apples, which he sells three for a cent, getting of course, ten cents for them.

Another farmer, also with 30 apples, sells them two for a cent, getting 15 cents for his. They get 25 cents in all.

The next time they come in, with 30 apples apiece, they meet at the edge of town and put their apples together, making 60 apples. One man having sold two for a cent, the other three for a cent, they decide to sell them for five for two cents.

They do so, and when they're through find out they have received but 24 cents.

The problem is, why did they not get as much for their apples selling them five for two cents as they did when they sold them separately? Or, what becomes of the cent?

TWO GOOD RECIPES

Written for California Cultivator

These two recipes were sent us by a subscriber whom we are sorry we cannot credit with them as we have not her name. We will appreciate it if she will send us her name after seeing these recipes printed.

"I am sending you these two recipes for you to use or not, as you wish or have space any time. The first is a recipe that has been used in our family for over 50 years and was always favored by the little folks. The 'Mock Whipped Cream' was asked for by a subscriber not long ago. It may have been this she wanted.

Fruit Bread

Three pounds dried prunes, one pound dried pears, half pound dried figs, one pound raisins, half pound citron, one pound currants, one pound nuts, half cup shortening, two yeast cakes, one teaspoon cinnamon.

Cook prunes and pears, drain off the juice, put through the chopper with the citron and figs, put back in kettle, add raisins, currants, nuts and cinnamon. Make a sponge as for bread; let it rise, mix dough with juice, add the warm fruit, salt and shortening and flour to make a stiff dough, let it rise, put in pans, let rise again and bake about one hour in a moderate oven. Do not let it chill.

Mock Whipped Cream

"Cream one banana, add teaspoon of vanilla, half cup confectioners' sugar and the stiffly beaten whites of two eggs."

FACTS VERSUS FANCIES

Richard Le Gallienne was sympathizing with a young writer whose book of poetry had been refused by twelve publishers.

"Real lovers of poetry," said Mr. Le Gallienne, "are unfortunately becoming rare. Too many people nowadays are like the judge.

"This judge was recommended by a poetic friend to read Shelley. The great man of the law said he supposed he ought to read a little poetry, and, having heard so much of Shelley, he would try him.

"And what do you think of it?" said his friend to the judge after he had waded through a few pages of 'Epipsy-chidien.' 'Isn't it beautiful?"

"Well, well—oh, yes. I daresay it is," said the judge. "But what I want to know is when are we going to get at the facts?"—Washington Star.

REVENGE

"Jones," said his employer, "I'll give that vacancy on the staff to your twin brother. Run and fetch him."

"Twin brother, sir!" echoed Jones, who is a "britherless bairn," and was therefore naturally astonished.

"Yes, your twin brother," replied his employer, with grim humor. "I saw him at the ball game yesterday afternoon while you were attending your grandmother's funeral. A sad young dog he must be, I'm afraid, to go to a ball game while his brother was attending his grandmother's funeral, eh? Nevertheless, he shall have the vacancy. Run home and fetch him, and mind you don't return without him."

HOW TO GET THIS \$2.25 ALUMINUM GRIDDLE AT A SAVING OF \$1.40

Get 50 cents worth of Karo from your grocer, and send the labels to us together with 85 cents and we'll send you this \$2.25 Solid Aluminum Griddle by prepaid parcel post.

HERE is a clean cash saving of \$1.40—and thousands of housewives have already taken advantage of this remarkable chance to get an aluminum griddle for less than the wholesale price. This Aluminum Griddle needs *no greasing*. It doesn't chip or rust. It heats *uniformly* over entire baking surface—doesn't burn the cakes in one spot and leave them underdone in another. It doesn't smoke up the kitchen—and the cakes are more *digestible* than when fried in grease.

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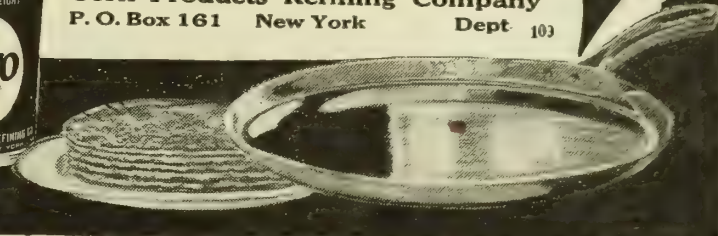
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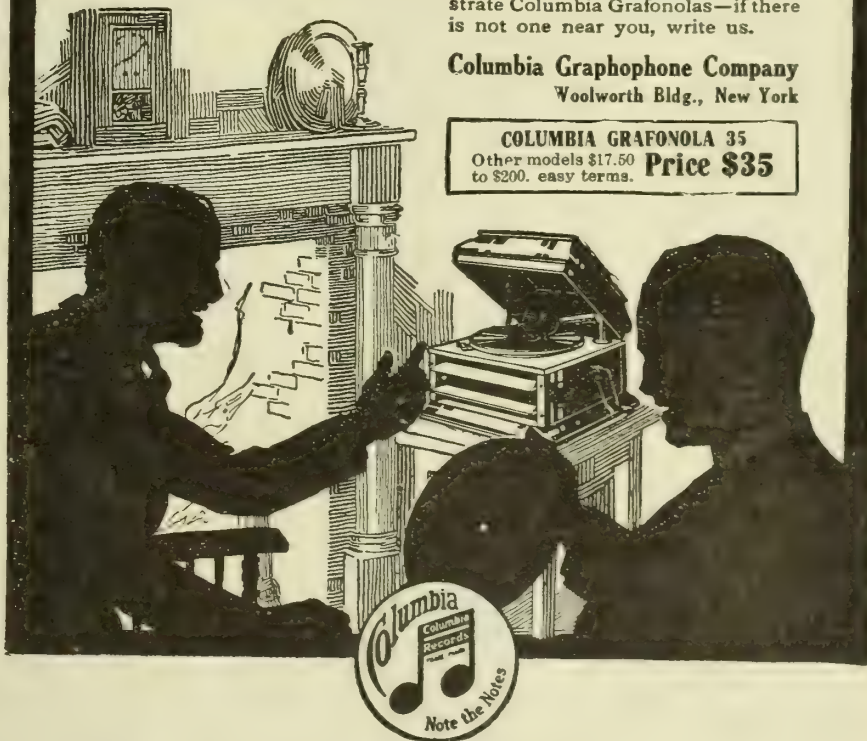
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MARKETS

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DRIED FRUITS

Wholesale prices are:
PRUNES—Local selling price, bulk basis in carload lots, 1915 crop: Santa Claras, 30-40s, 6½c; 40-50s, 5½c; other sizes, 5½c. All outside sections ¼c lower.
Other Fruits. Stand. Extra
50-lb. boxes and. Choice Choice Fancy
Peaches ... 4½c 4½c 4½c 5½c
Pears ... 6½c 8 c 8½c 10½c
Apples ... 8 c 8½c 9 c
Apricots ... 9 c 10½c 10½c 11½c

RAISINS

The following prices, are f. o. b. Fresno, as given out by the Associated Raisin Company for the 1915 crop and effective September 28: Fancy seeded, 16-oz., 7c; do, 12-oz., 5½c; bulk, 6c; choice seeded, 16-oz., 6½c; 12-oz., 5½c; seeded raisins, per cs., Sun Maid quality, 36 to cs., \$2.45; 48 to cs., \$3.25; loose, floated, in 50-lb. cs., Muscatels, 1-crown, 6c; 2-crown, 5½c; 3-crown 5½c; 4-crown, 6c.
The above prices are for November, and December shipments, and are guaranteed until January 1, 1916.

NUTS

Walnuts: See Los Angeles market.
Almonds: Prices fixed by California Almond Growers' Exchange. These varieties represent the major portion of the crop. Other varieties produced in limited quantities will be sold according to relative values.
Nonpareil15
IXL13½
Ne Plus13
Drake's11
Languedocs11
Peanuts—
Unpolished3½@4½
Polished4@5½
Shelled, China5½@6
BEANS
Wholesale selling price:
Limas4.90@5.00
Pink4.70@4.75
Black Eyes3.75@4.00

Cranberry, California5.50@5.60
Small White6.00@6.10
Garbanzos4.25@4.50
Large White6.20@6.30
Bayou5.50@5.60
Red Mexican5.15@5.30
Red Kidney8.00@8.25
Horse Beans2.00@3.50

HONEY

Wholesale selling price:
Comb, Water White, new14@16
Light Amber, new11@12
Amber, new7@8
Extracted White7@8
Light Amber4@5½
Dark Amber2
Beeswax25@28

RICE

Price net to growers at shipping points.
California Waterbume, lb.2@2.15c

HOPS

1915

Wholesale selling price:
Sacramento Valley9@10½
Sonoma-Mendocino10½@12
Oregon-Washington10@12

HAY

Under date of December 24, Scott, Magnier & Miller say:

We quote the average wholesale prices for hay in carload lots on today's market as follows:
Fancy Wheat Hay (It bales)...17.00@18.00
No. 1 Wheat or Wheat and Oat12.00@15.00
No. 2 Wheat or Wheat and Oat10.00@11.50
Choice Tame Oat15.00@16.50
Other Tame Oat10.00@14.50
Wild Oat8.00@11.50
Alfalfa10.00@14.00
Stock Hay6.00@9.00
No. 1 Barley Straw, bale.....25@40

GRAIN

Alfalfa Seed17½@18½
Wheat, Cal. Club1.60@1.70
Blue Stem1.80@1.82½
Barley Feed1.25@1.27½
Shipping and Brewing1.30@1.32½
Corn, Eastern Yellow, old1.67@1.68
New1.55@1.62½

Corn, Egyptian White1.47½@1.52½
Oats, Red, Feed1.27½@1.35
Oats, Red, Seed1.40@1.50
Oats, White, Feed1.37½@1.40
Oats, Black, Feed1.50@2.00
Millet2½@3
Rape2½@3
Flaxseed5½@6
Kye1.55@1.57½

FEED STUFF

Wholesale prices.
Alfalfa Meal, car lots16.50@17.50
Bran, ton25.00@26.00
Feed Cornmeal38.50@39.00
Cracked Corn38.50@39.00
Rolled Barley, ton27.50@28.50
Middlings31.00@33.00
Shorts26.00@27.00
Oilcake Meal37.50@39.00
Cocoanut Oilcake Meal.....23.00@24.00

Citrus Fruit Market

LOS ANGELES, Dec. 29, 1915.
The best that can be said about the citrus market this week is that there is strong inquiry for California oranges. The prices are very satisfactory, the fruit is giving the best satisfaction ever, and the best condition that has ever obtained at this period of the year prevails.
Lemons likewise have no quarrel.

Shipments

Shipments of oranges to date from Southern California since November 1, 1915, 1012 cars, lemons 788, total 1800. To same date last season, oranges 880, lemons 452, total 1332. From Central California this season, oranges 3567, lemons 63, total 3630. Last year same date, oranges 4323, lemons 82, total 4405. From Northern California this season, oranges 531. Last year same date 431.

NEW YORK, Dec. 27. — Thirty-two cars California navel, one car Arizona navel, six cars California lemons sold. Navel about 25 cents lower. Lemons 25 to 50 cents lower. Arizonas lower. Weather partly cloudy.

PHILADELPHIA, Dec. 27. — Three cars sold. Market lower on oranges; strong on lemons.

NAVELS—
Lindsay, C. C. Ex.\$2.35
Banner, xf, Sutherland F. Co..... 2.50

PITTSBURGH, Dec. 27.—Eight cars sold. Market steady on oranges and lemons.

NAVELS—
Golden Star\$2.50

CLEVELAND, Dec. 27.—Eight cars sold. Market is unchanged.

NAVELS—
A One, American F. Dis.\$2.80
Paramount2.60
Diamond Mtn., Randolph F. Co..... 2.55

CINCINNATI, Dec. 27. — Four cars sold. Market is steady.

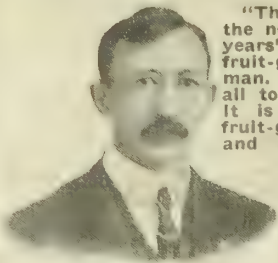
NAVELS—
Lindsay, C.C. Ex.\$2.35

BOSTON, Dec. 27.—Eighteen cars sold. Market is easier on both oranges and lemons.

NAVELS—
Paramount Blue\$2.55

ST. LOUIS, Dec. 27.—Seven cars sold. Market steady on navels; strong on lemons.

CHICAGO, Dec. 27.—California casabas are firmer and higher because of the holiday demand and limited supply. Flat cases, six to eight melons, \$2.50@3.00. Orange, boxes California navels, \$2.25@3.25; Florida, \$1.50@2.25; Satsumas, half boxes, \$1.60@1.75; tangerines, straps two, \$2.00@3.25. Pomegranates, half orange boxes, \$2.00. Lemons, boxes, fancy California, \$4.00@4.25; choice \$3.50@3.75. Grapes, 50-pound drums, Emperors, \$3.75@4.25; Catawbas, 8@12c per basket. Pears, 50-pound boxes, Winter Nelis, \$2.75@3.00. Strawberries, \$1.00 a quart. Grapefruit, boxes, depending on color and size, \$2.00@3.25. Kumquats, quarts, 12½c. Pineapples, crates, Hawaiian, dark color, not desirable, \$2.00@2.50. Cranberries, barrels, \$10.00@11.00. Apples, Western, boxes, \$1.10@2.75.

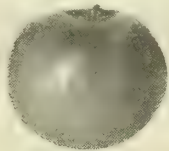


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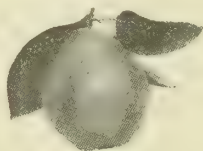
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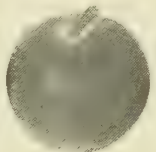
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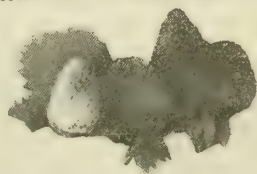
Anjou Pear—Best commercial pear. Other dependable varieties, Seckel, Bartlett, Lincoln, Comice, Clapp, Winter Nelis. Dwarf Pears—Can be planted closer, bear 2nd and 3rd year. Quinces—Fine for flavoring preserves and jellies.



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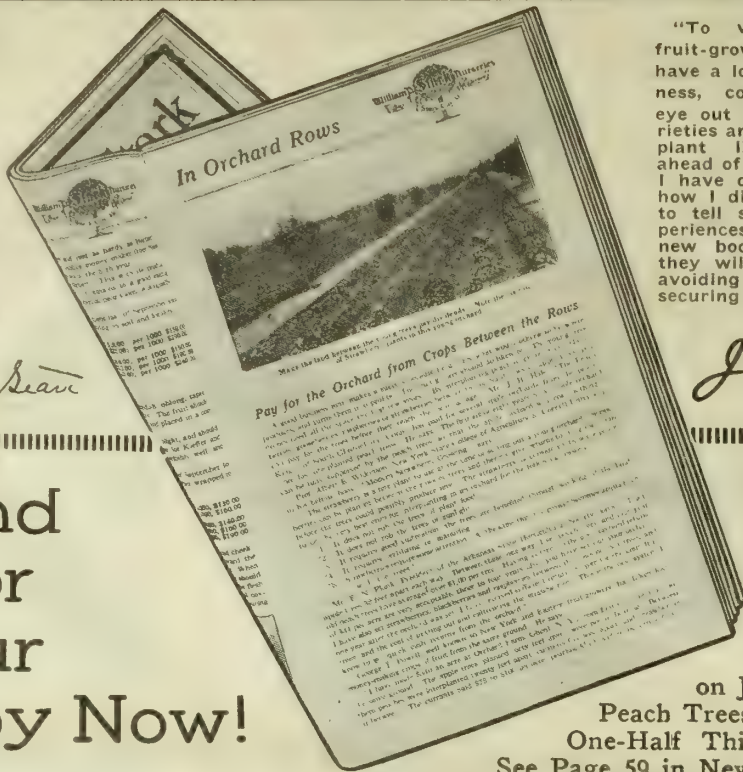
Apricots—Blenheim, Royal, Tilton and all good varieties. Well-balanced, heavy-rooted, strong trees.



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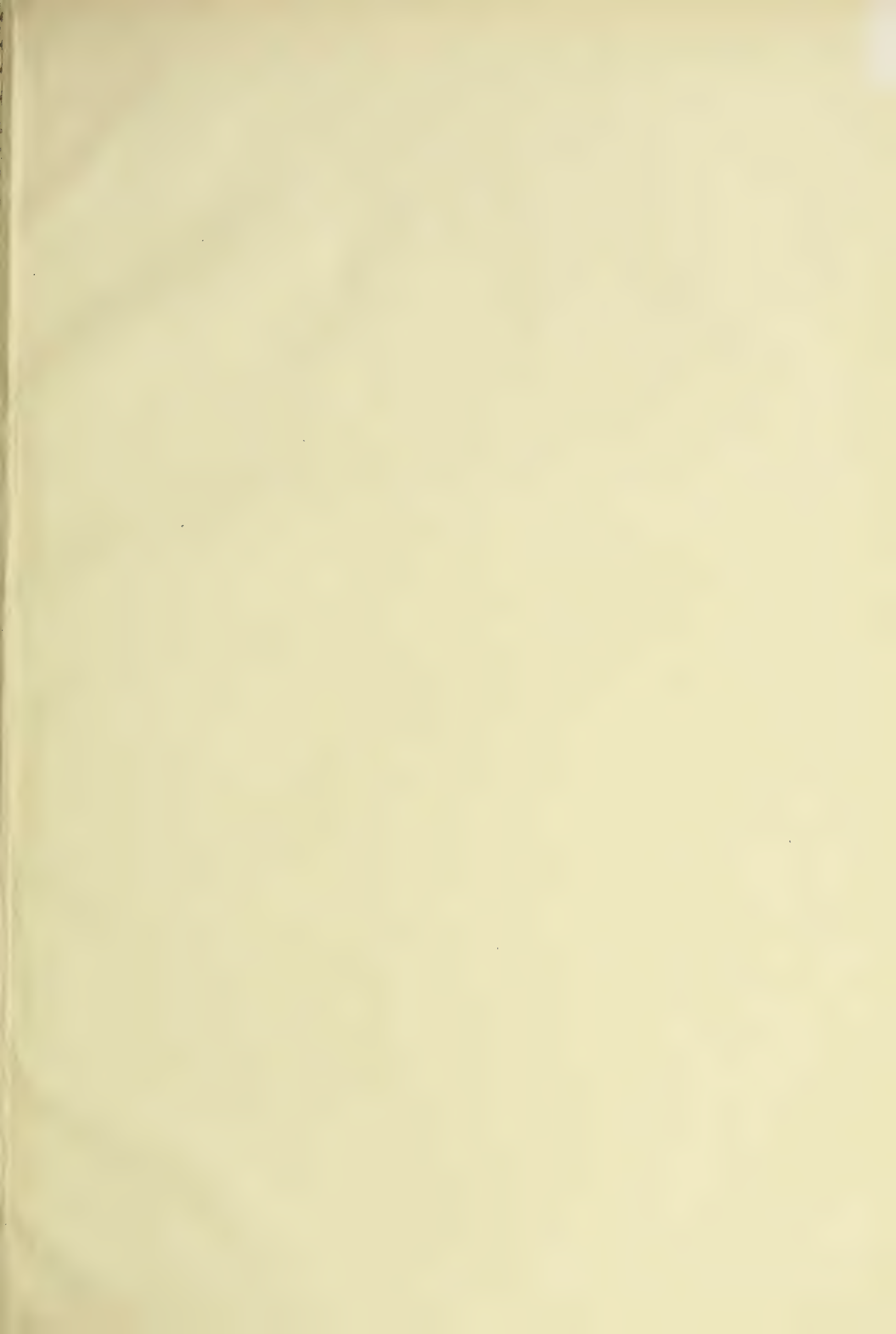
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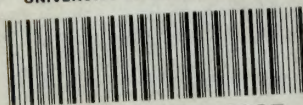
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